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DEVOTED TO

Popular Instruction and Literature.

CONTENTS.—JUNE, 1867.

J. W. SCHERMERHORN & COMPANY,
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Teachers' Bulletin.

☞ Teachers who wish positions should have "Application Form." The MONTHLY is taken by the leading Principals and School Officers, hence representation in this Bulletin is most efficient.

EXPLANATION OF ABBREVIATIONS: Number introducing each paragraph refers to Candidate's application on file at AMER. SCHOOL INST. Name of School or College signifies that Candidate has been graduated at Institution thus named. If "Ed." precedes name of School, Candidate has been educated there, *not graduated.* Figure following denotes *number of years experience.* Branches taught are so abbreviated as to be understood. Names of Foreign languages *spoken* by Candidate are in *Italics.* Then follows name of Church of which Candidate is a *member*—B. for Baptist; Cl., Congregational; R., Roman Catholic; D. R., Dutch Reformed; E., Episcopal; L., Lutheran; M., Methodist; P., Presbyterian. "Home," as "$300 and Home," means $300 *Cash Salary and Board, Washing, Fuel and Lights.*

Ladies—English, French, Drawing, etc,

101—Troy Sem.; 5; Eng., French, Latin; $500.

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103—Ed. Genesee Wes. Sem.; Eng., Maths., Classics, French, German; M; $400.

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107—Ed. Glen's Falls Acad.; 12; Eng., Maths., French, German, Italian, Spanish; P.; $500 and Home.

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109— ——; Eng., Maths., Book-keeping, French, German, Drawing, El. Music, Gymnastics; E.

110—Hamilton, C. W., 3; Eng., Maths., Book-keeping; El. Singing, Gymnastics.

111—Englewood; 4; Eng., Maths., Fr., Latin; P.

112—Elmira; 1; Eng., Maths., Fr., Latin; $400.

113—New Hampton Inst; 2; Eng., Maths, French; $300 and Home.

114—Ed. New York; Eng., French, El. Piano; E.

115—Genesee Wes. Sem.; Eng., Maths., Latin, French, Drawing; P.; $450 and Home.

116—Phipps' Sem.; 2; Eng., Maths.

117—Ed. Vassar; Eng., Maths., French, Latin, El. Piano; $300 and Home.

118—Brunswick H. Sch.; Eng., Maths., Latin, El. Drawing and Painting; Cl.

119—Ed. New York; 8; Eng., Gymnastics; E.; $600.

120—Kent's Hill; 2; Eng., Maths., French, German, Drawing, Painting, $400 and Home.

121—Framingham, Nor. Sch.; 4; Elocution, Gymnastics; $600 and Home.

122——; 6; Eng., Maths., French, Book-keeping.

123—Galway Sem.; 10; Eng., Maths.; P.

124—N. Granville; 6; Eng., Maths., French, Drawing, Painting, El. Piano; $300 and Home.

125—Genesee Coll.; 9; Eng., Maths., Classics, French, German, Sciences; M.

126—Wyoming Sem.; Eng.; Maths., Sciences; French, Drawing, Painting; $600.

127—Alfred Un.; 5; Eng., Maths., Nat. Sciences, French, Latin, Drawing; B.; $60.

128—Packer Inst; Eng., Maths., French, El. Piano; $400 and Home.

129—Ed. Mass.; Eng.; Maths., French; E.

130—Brooklyn; 5; Eng., Maths., Gymnastics; Cl.; $500.

131—Ed. Conn.; 7; Eng., Book-keeping, Drawing; E.; $300 and Home.

132—Ed. Ky.; 2; Eng., Maths., Painting; P.

133—Pa. Nor. School.; 8; Eng.; Maths., Book-keeping, Singing, Gymnastics; E.

134— ——; 8; Eng., Maths., *French*, Latin, Drawing; E.; $600.

135—N. Y. Conf. Sem.; 6; Eng., Maths., *French, German*, Spanish, Italian, Drawing, Painting, El. Piano; P.; $150 and Home.

136—Portland H. School; 4; Eng., Maths., Latin, El. French, Spanish, Gymnastics; $650.

137—N. Granville Sem.; 6; Eng.; Maths., Nat. Sciences, Drawing; M.; $300 and Home.

138—Mount Holyoke; 11; Eng., Maths., Cl.; $1000.

139—Stanwix Sem.; 1; Piano, Eng., Maths., French, German, Latin; P.; $200 and Home.

140—Rutgers; 16; Eng., Maths; French, El. German. Gymnastics; City only.

141—El. Tutors; 10; Eng., Maths.; Latin, French, Drawing, Painting; E. N. Y. City only.

142—Genesee Sem.; 1; Eng., Maths., *French, German.* City only.

Ladies—Music, etc.

383—Ed. Europe; 10; Piano, Harp, Singing, Eng., *French;* E.; $700 and Home.
384—Ed. N. J., Piano, Eng.; E.
385———; 3; Piano. Drawing, Painting, Eng., Maths., Latin; $200 and Home.
386—Spingler Inst.; 1; Piano, Organ, Eng., Maths., *French;* B.
387—Fairfield; 2; Piano, Eng., Maths., Latin; E.
388—Ed. N. Y.; 1; Eng.; Piano, El. French; D. R.
389—Ed. Champlain Acad.; 3; Piano, Singing, Eng., Maths., Book-keeping; P.
390—Ed. N. H.; 5; Piano, Singing, Eng., Maths. Cl.;
391—Westfield Nor.; Sch. 3; Piano, Singing, Eng.; $150 and Home.
392—Steubenville; 1; Piano, French, Eng., Maths., Gymnastics; P.
393—Troy; 10; Piano, Singing, Drawing, Eng., Maths., $500.
394—E. England; 7; Piano, French, Eng.; E.
395———; 5; Piano, Guitar, Singing, French; E.
396—Ed. Saratoga Sem.; Piano, Drawing Painting, Eng., Maths.; E.; $300 and Home.
397—Ed. England; 10; Piano, Harp, Guitar, Drawing. Painting; E.
398—Ed. Hudson Riv. Inst.; 1; Piano, French; $300 and Home.
399—Ed. England; 8; Piano, El. Singing, Eng., French; E.
400—Ed. Hillsdale Coll.; 2; Piano, Singing, Drawing, Eng., Maths.; P.; $250 and Home.
401——; Piano; E; $300 and Home.
402—Moravian Sem.; 4; Piano, Singing, Eng.; E.; $300 and Home.
403—Ed. Lima; 3; Piano, Organ, Singing; P.
404—Ed. England; 6; Piano; E., $600 and Home.
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409—Castleton Sem.; 3; Piano, Eng., Maths., French, Drawing, Painting; B.
410—N. Y. Nor. Sch.; 10; Piano, Eng., Maths., French, El. Drawing; E.; $500 and Home.
411—Kent's Hill; 4; Eng., Maths., Piano, Latin, French, German; M.
412—Ed. Masters; 4; Piano, Singing; Cl.; $500 and Home.
413—Ed. Bost.; 5; Piano; Singing; $400 and Home.
414—Ed. N. J.; 1; Piano; P.; $400 and Home.

Ladies—Drawing, Painting, etc.

511—Ed. Cooper Inst.; 3; Drawing, Painting.
512—Abbott Acad.; Drawing, Painting, French, Latin, Singing; Cl.; $500 and Home.
513—Pennington Inst.; 1; Drawing, Painting, French; Eng.; Maths.
514—Grecian Edifice Acad.; 4; Drawing, Painting, Eng., Maths.; D. R.; $600.
515—Ed. Cooper Inst.; 1; Drawing, Painting, Eng., Maths., El. Latin; $150 and Home.
516—N. Y. Conf. Sem.; 1; Drawing, Painting, Eng., El. Piano; M.; $300 and Home.
517—Genesee Wes. Sem.; Drawing, Painting; M.; $400.
518—Ed. Conn.; Drawing, Painting, Piano; E.; $300 and Home.
520—Ed. Frederick Sem.; 2; Drawing, Painting, Eng.; E.; $240 and Home.
521—Ed. Troy Sem.; 6; Drawing, Painting, French, Eng., Maths.; B.; $300 and Home.
522—Fort Edward; 8; Drawing, Painting, French; Eng., Maths.; M.; $500 and Home.
523—Cooper Inst.; 3; Drawing; Painting. N. Y. City or vicinity.
524—Charlottville Sem.; 5; Drawing, Painting; B.; $300 and home.
525—Ed. Lowville Acad.; 2; Drawing, Painting, Piano; E; $200 and Home.
526—Castle on Sem.; 2; Drawing, Painting, Eng., Maths., El. French; $300 and Home.
527—Rockford Sem.; 6; Drawing, Painting, Eng., Maths.; Latin; Cl.; $150 and Home.

Foreign Ladies, etc.

618—Ed. Paris; 10; *French*, Piano; E., $700 and Home.
619—Ed. Germany; 4; *French, German*; El. Piano.
620—Ed. Germany; 10; *French, German*, Piano.
621——; 2; *French;* E., $1000.
622—Paris; 12; *French;* C.
623——; 5; Singing, Guitar.
624—Ed. Switzerland; 12; *French;* P.; $600.
625—Ed. Germany; 5; *French, German*, Piano, Singing; L.
626—Ed. Germany; 4; *French, German*; $300.
627—Ed. Paris; 7½ *French*; E.
628—Ed. Paris; 12; *French;* E.
629—France; 13; *French, German*, Drawing, C.
630—Ed. Germany; 8; *German, French*, Singing, Piano; Guitar.
631 Ed. S. C.; 4; *French*, Eng., Piano, Singing.
632—Ed. Europe; 15; *French*, Eng., Piano, Singing, E.
633—Ed. Europe; 9: *French German*, Eng., Piano.

Gentlemen—Eng., Maths., Classics, Fr, German, Military Tactics, etc.

774—Ed. Conn.; 15; Eng., Maths., Book-keeping; Cl.; $1000.
775—Waterville; 10; Eng., Classics, French, German, Book-keeping, Gymnastics; Cl.; $1200.
776——; 2; Eng., Maths; M.; $600.
777—Yale; 7; Eng., Maths., Nat. Sciences. Book-keeping, French; $1000.
778—Ed. England; Eng., Maths., Book-keeping, El. French, Mil. Drill; E.
779—Miami Un.; 2; Eng., Maths., Classics, Singing, Gymnastics; P.; $1000.
780—Ed. England; 4; Eng., Maths., Sciences, Book-keeping, Mil. Drill; E; $700 and Home.
782—Ed. Mass.; 9; Eng., Maths., Book-keeping, Gymnastics; B.; $7 0.
783—Yale; 13; Eng., Maths., Classics, Gymnastics; P.; $1800.
784—Yale; 3; Eng., Maths., Classics, Book-keeping, El. German, Gymnastics, Cl.
785—Penna. College.; 6; Eng., Maths., Classics, *German*, Piano, Singing; L.; $1000.
786—Ed. Williams Col.; 4; Eng., Maths., Classics, El., Singing; E.; $800.
787—Taunton H. Sch.; 1; Eng., Maths., Nat. Science, Book-keeping, Organ, Piano, Singing; $800.
788—Dickinson Coll.; 5; Eng., Maths., Classics, French, German; $800.
789—Ed. Canada; 4; Eng., Drawing; M.; $750.
791—Pa. Coll.; 1; Eng., Maths., Classics; $1000.
792—Amherst; Eng., Maths., Classics, Nat. Sciences, French, Italian, El. German, Mil. Drill; E.; $900.
793—Ed. Tutor; 2; Eng., Maths., Classics; E.; $500 and Home.
794—N. Y. Nor. Sch.; 2; Eng., Maths., Book-keeping, Singing; P.; $1000.
795—N. Y. Conf. Sem.; 7; Eng., Maths., Book-keeping, El., Classics, Gymnastics; M.; $1500.
796—Ed. Trinity; 4; Eng., Maths., Classics, Book-keeping, French, German, Drawing, Gymnastics; E.; $800 and Home.
797—Ed. Greenville Acad.; 5; Eng., Maths., Book-keeping, Singing; P.; $1000.
798—E. Greenwich; 2; Eng., Maths., Classics; B.
799—Brown Un.; 5; Eng., Maths., Classics, French, German, Spanish; $1500.
800—Yale; 4; Eng.; Maths., Classics, German, Gymnastics; E.; $1500.
801—N. C. Un.; 23; Eng., Maths., Classics, Singing; $1200.
802—Wesleyan Un.: 16; Eng., Maths., Classics, Book-keeping, French, German; E; $1000.
803—Ed. England; 2; Eng., Maths., *French*, Latin, Gymnastics; E; $600.
804—Coll. New York; Eng., Maths., Drawing; $600; N. Y. City only.
805—Acadia Coll.; 20; Eng., Maths., Classics, French; B. City only.
806—Ed. Dartmouth; 12; Rhetoric, Elocution, Literature, Physiology; $1400.
807—Amherst; Eng., Maths., Classics, Book-keeping, French, *German*, Gym astics; Cl.
808—Amherst; 10; Eng., Maths., Classics, French, Drawing, and Mil. Drill; P.; $1500

Foreign Gentlemen—Also American Gentlemen who Teach Music

5—Ed. New York; 6; Piano, Organ, Guitar, Singing; P.; $1000.

6—Germany; 20; *French*, *German*, Classics, Piano, Singing; L.; $1000.

7—Belgium; 2; *French*, Latin, Nat. Sciences; C.

8—Ed. Germany; 6; Piano, Organ, Singing, Harmony; L.; 1500.

9—France; 18; *French*, *German*, *Spanish*, Drawing; E.; $500.

10—Ed. France, 6; *French*, *German*.

11—Ed. France; 10; Piano, Organ, Singing; L.

12—Switzerland; *French*, *German*, Drawing, Painting, El. Piano, El. Guitar.

13—Austria; 3; French, German, Maths., Piano, Mil Drill; $1000.

14—Ed. Germany; 2; *German*, Piano, Organ, Singing; Drawing; L.; $1000.

15—Ed. Germany; 2; *French*, *German*.

16—McGill Un. C E.; *French*, Eng., Maths., Classics, Piano, Organ; C.; $500.

17—Germany; 20; Piano, Organ; E.; $2000.

18—Germany; 11; *French*, *German*, Classics, Piano; $1500.

19—Germany; *German*, *French*, Eng., Classics.

20—Ed. France; *French*, Classics.

22—Ed. Germany; 20; Piano, Singing, Guitar, Flute; C.; $1000.

22—Ed. Germany; 20; *French*, *German*, Drawing, Painting, Maths.; P.; $1500.

23—France; 10; French, Spanish, German; $600 and Home.

24—Ed. France; 4; *French*, Latin, Maths.; $800.

25—Ed. Paris; 6; *French*, Spanish, Violin, Singing; C.; $800.

26—Ed. Germany; 20; *German*, Drawing, Painting, Piano Singing, Violin; $800.

27—France; 3; *French*, *Spanish*, *Italian*.

28—Ed. France; 4; French, Latin; C.

SCHOOL PROPERTIES FOR SALE, RENT, OR EXCHANGE.

The AMERICAN EDUCATIONAL MONTHLY is read by most of the Principals and School Proprietors in the country, hence we have unparalleled facilites for learning of persons who desire to *buy*, *sell*, or *exchange* School Property. By our plan Schools may be offered without exposure to the embarrassment of *open announcements*.

TERMS.—Five per cent. commission upon the amount. This commission is due as soon as transfer of property is agreed to. No sale will be undertaken without the payment of a preliminary fee of five dollars (for the advertisement and correspondence). This may be deducted from the final commission. For negotiating the *renting* of School Properties, the same as for sales; the Commission being estimated on rent for one year.

Subscribers to the AMERICAN EDUCATIONAL MONTHLY, and those who become subscribers ($1.50 per annum), may obtain particulars of properties by addressing, with stamp,

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6.—FOR SALE—In N. Y. City, a Boarding and Day School for young ladies. Has been in successful operation ten years. Average number of pupils forty. House can be rented at $1,600 per an. Price for good will, school and household furniture, $3,200, cash.

7.—FOR SALE—In Brooklyn, N. Y., a first class School for Young Ladies, with real estate, Lot 44x120, House 38 feet wide, double frame, two stories, basement and extension. Receipts, $10,000 per annum. Average yearly attendance 200. Only take seven boarders now. Real Estate, $12,000. About half cash, and balance on mortgage. School Furniture at a fair valuation.

8.—FOR SALE—In Tioga Co., N. Y., on N. Y. & Erie R. R., a School Property adapted for either sex. Main Building three stories high; Wings two stories, and basement. Will accommodate 50 boarding pupils. Six acres of good land, with fruit and shade trees. Location healthy. Proprietor states that school while in operation was always full, pupils often being refused from lack of room. He thinks that from $4,000 to $5,000 can be cleared yearly. Buildings alone cost over $9,000 in cheap times. Price $5,000, one half cash, and balance to suit purchaser. Title undisputed.

13.—FOR SALE—Flourishing Boarding and Day-School, near New Haven, Conn. In operation fifteen years. Frame buildings consist of dwelling with school-rooms attached; a two story building used as gymnasium. Play-ground and garden with fruit and shade trees. Buildings are insured for $7,000; water and gas can be introduced if desired. Location pleasant and access easy. Price, for goodwill, school, and some household furniture, &c., $10,500; $3000 cash, and balance on mortgage. If not sold soon, it may be rented.

14.—A gentleman about to retire from a first-class seminary, offers for sale the following: A full assortment of Rosewood and Black-walnut Gymnastic Apparatus, Globes, Charts, Maps with hanging apparatus, School-desks in polished Oak of best style and quality, Ink-wells, &c., &c. Also, a fine Library of about 1200 vols., a valuable cabinet of Minerals and Fossils, both perfectly classified, labelled and catalogued. Catalogues of the books, furniture, &c., supplied when applied for.

TRUTH vs. MISREPRESENTATION.

In a recent number of an "Educational Bulletin," issued monthly in this city, and circulated among the Teachers and educational men of the entire country, by the Publishers of a Series of School Books, for the sole purpose of advertising and puffing their own publications, we notice some remarkable statements.

For example—as evidence of the wonderful "Progress" of certain Books, and of "the appreciation of merit" in the same, as well as to show how the "National Series are held in comparison with competing text-books," they have selected from the tabular statements of the Report of the Regents of the University of the State of New York, dated March, 1866, but made up from the reports received from 212 Academies under their supervision, and bearing date from June to September, 1865, the following "interesting items," the evident design of which is to convey a false impression in regard to the use of their own and of other's publications.

FROM THE BULLETIN.

READERS—Whole number of Academies reporting	187
Using Parker & Watson's Readers	90
Number of competing Series	14
ARITHMETICS—Academies reporting	195
Using Davies'	55
Competing text-books	14
ALGEBRAS—Academies reporting	195
Use Davies'	66
Competing text-books	10

If the object of publishing and circulating the above is not willfully to deceive, surely the publishers of the above-named books have sullied their reputation for honesty and fairness, when it is known that some of the "Competing text-books" were used in a larger number of Academies than were their own, *and they knew it.*

An honest and truthful statement from the same report would read as follows:

READERS—Whole number of Academies reporting	187
Use Parker and Watson's Series	90
Use Sanders' Series	80
Use Willson's Series	17
11 other Competing Series.	

Many Academies report two or more authors in use, on the same subjects.

ARITHMETICS—Academies reporting	195
Use Davies'	55
Use Robinson's	95
Use Thomson's	41
11 other competing series.	
ALGEBRAS—Academies reporting	195
Use Davies'	66
Use Robinson's	139
Use Greenleaf's	10
9 other competing authors.	

In January, 1867, it was found upon actual inquiry that Robinson's Arithmetics were used in 108 of those Academies, and Robinson's Algebras in 150.

These two statements speak for themselves, and need no comment. The motive is obvious.

We will add one more fact bearing upon the comparative circulation of books, viz.: According to the Annual Report of the Superintendent of Public Instruction for the State of Wisconsin, made December, 1866, the whole number of School Districts in the State was 3,448.

Using Sander's Spellers	2,147
Using McGuffy's Spellers	1,298
Using Parker and Watson's Spellers	305
Using Sander's Readers	2,165
Using McGuffy's Readers	1,373
Using Parker and Watson's Readers	472

We only desire that the "American Educational Series" shall stand upon their *intrinsic merits*, and are willing to submit them to any test, even that of comparative circulation.

Descriptive Catalogues and Circulars will be sent to Teachers and School Officers upon application.

Address

IVISON, PHINNEY, BLAKEMAN & CO.,

47 and 49 GREENE STREET, New York.

NEW YORK, May 1, 1867.

THE NEW AMERICAN
SCHOOL DESK AND SETTEE.

(GEORGE MUNGER'S PATENT.)

Fig 1.

Fig. 2

The New American School Desk and Settee is a combined desk and seat so constructed that the desk and settee are entirely **Independent** and **Self-supporting.** The settee stands close to the desk, yet nowhere touches it. Any movement of the pupil on the settee will not "joggle" the desk. The seat folds back to allow free access to the desk, and to make room for passage, gymnastic exercises, sweeping, etc. The seats may be made separate for each pupil, while the back remains continuous.

The back and seat of the Settee are curved to fit the natural outline of the body when in proper sitting posture. The Settee has been constructed with constant reference to the natural curves of the body; and is the only school seat ever made "**on physiological principles.**" It compels a natural, healthful, upright position, and that without constraint or weariness. With it, the proper position is the easiest position—which can be said of no other school seat. The Settee stands firmly, and may be used as a movable settee, or fastened to the floor.

Fig 3.

Fig 4.

The Braces (a a, fig. 3) support the seat, and also serve to keep pupils within the line of the aisle, and the clothing (of girls especially) in proper place.

The Back piece (e, fig. 4) is strongly dove-tailed to the stanchions (f f) making the desk very firm, without the ordinary braces on the under side. Fig. 4 represents a desk to be used in front of a row, or without settee before it; the curve of the stanchions (f f) is therefore reversed.

The Wood-work of both desk and settee is dove-tailed to the iron, so that warping is impossible; and being fastened at one edge only, is free to shrink or swell without cracking. The peculiar attachment of the wood and iron enables these Desks and Settees to be **readily taken apart or set up by any inexperienced person.** Each part is marked to indicate its proper position. The several parts are made in duplicate, so that any piece that may be defaced or otherwise injured, can be supplied from the factory at little cost, and replaced in a moment. The Iron Work is painted to correspond in color with the wood, which is commonly of chestnut. This wood not only helps, by its color, to give a light and cheerful appearance to the school room, but is less easily defaced than other woods by the inevitable bruises and scratches incident to school use. Desks and Settees, however, are made of any kind of wood, *to order;* also of any required length.

Fig. 5

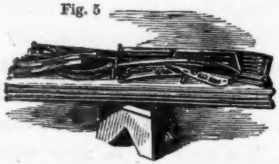

Fig. 5 shows the Desk and Settee when taken apart for packing. Six desks and settees complete occupy when packed not more than the space of one when standing. This gives the New American Desk and Settee a decided advantage over all others in transportation, a large saving being effected, not only in bulk, but in classification of freight. When securely boxed they are shipped as *ordinary* freight, at less than one-third the rate charged for furniture.

The ordinary sizes are: For Grammar Schools, 42 inches long, (*two* inches more than the customary allowance,) by 15 inches wide. For Primary Schools, 36 inches long by 12 inches wide.

Price, Grammar School size, Double Desk	*$4 00*
" Primary " "	*3 50*
" Settees for either size, for two pupils	*3 50*

Several schools have already been supplied with these Desks. Testimony can be furnished that they give *perfect* satisfaction. Specimens may be examined at 430 Broome Street, New York, and at Speakman & Proctor's, 6 Custom House Place, Chicago, Illinois. Persons at a distance may obtain a perfect model, by mail, for $3.

J. W. SCHERMERHORN & CO., Manufacturers,

430 BROOME STREET, New York.

Specimens on exhibition at WOODMAN & HAMMETT'S 37 & 39 Brattle Street, Boston.

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THE INSTRUCTION OF THE PEOPLE IN THE NINETEENTH CENTURY.

II.—POPULAR EDUCATION IN AMERICAN SCHOOLS—*(Continued.)*

THE common school has certainly produced unprecedented results in America. Let us examine its origin and organization.

No sooner had the Pilgrim Fathers landed on the shores of their new country than they devoted themselves to the education of their children. A regulation of 1642, states that they will not suffer "the barbarism which does not teach children to read and to be acquainted with the penal laws." Education, thus required by the State, was directed by teachers appointed by the heads of families. All those States, now known collectively as New England, rivalled each other in zeal for this object, which they justly regarded as of the first importance. These schools, imbued with the Puritan spirit, trained that moral, religious, practical, enterprising class that has been the saving element of the great Republic. At this time no one was entirely ignorant; all citizens received very nearly the same education. Subsequently, the War of Independence, the conquest of additional territory, the formation of new States, the establishment of new routes of communication, canals and railroads, caused education to be in some measure neglected. Emigration had brought into the country a large number of poor and ignorant families. The old laws which made education compulsory, had become a dead letter; ignorance was gaining ground. At length, about thirty years ago, some clear-sighted men became alarmed at the state of things. Then took place one of those popular movements of which we have no conception in Europe. Associations for the improvement of education were everywhere formed. Journals for the discussion of the subject were issued in great numbers. Several distinguished men, Messrs. Henry Barnard, Horace Mann, Professors Stowe and Bache, went to Europe to study the most celebrated systems there. On their return to America they published the result of their inquiries, and placed themselves at the head of the new movement. What was accomplished by individual energy under these circumstances is truly wonderful. Mr. Henry Barnard, intrusted by the State of Rhode Island

with the task of reforming its educational system, has given in his official report an account of the preliminary labor which he performed. We learn from this document that he visited all the towns in the State twice, questioned more than four hundred teachers upon their methods of instruction, and examined the pupils in all the schools. In addition, he wrote more than a thousand letters to persons best able to suggest valuable ideas. He called a meeting in each town to discuss the matter with the citizens and teachers. He delivered more than five hundred lectures upon the subject, and organized everywhere local associations to maintain and extend the interest thus awakened. He published a journal which was gratuitously distributed and scattered broadcast throughout the community. It was only after this immense preparatory labor, after having thoroughly mastered the subject himself, and having enlightened the public mind, that he proposed reforms which were adopted by the legislature of Rhode Island. Similar action took place in the other States, even in the Western, as Ohio and Michigan. Corresponding organizations, which they are still trying each year to improve, were everywhere formed.

In Europe such matters are differently conducted. The government appoints a commission. This commission works secretly; nothing is known of its doings. At last, after many years of mysterious preparation, a law is promulgated. It is excellent, perhaps, but it produces very little result, because the public mind is not ready for it. In matters pertaining to education, all legislation not supported by the co-operation of the community is valueless.

As the federal government does not concern itself with instruction, the educational systems differ in the different States. Yet the general principles are the same in all the free States, because they rest upon a common basis of similar institutions and manners, and because they all copy readily the excellences of their neighbors. Local liberty produces here a real and living resemblance far superior to the outward, lifeless uniformity imposed elsewhere by central authority.

Elementary instruction is everywhere in charge of the town, but the State exercises a certain supervision. The law requires a sufficient number of schools to be established, to accommodate all children of suitable age. Two penalties are employed to enforce this law. First, the State may enter an action against the town to oblige it to tax itself for the support of education, and the parents of any child to whom a place is refused in school have a right to claim damages. To involve the interests of the individual, and appeal to the courts to maintain them, is the American mode of securing the execution of law, and its efficacy cannot be denied.

The township which embraces an area of several English miles, and a population of 2,000 to 3,000, is divided into school districts. Each district containing from 150 to 300 inhabitants, maintains a school. The

size and population of the districts necessarily vary in different parts of the country. In the older States, situated on the shores of the Atlantic, they are smaller and more populous than in the West. Everywhere, however, the number of schools is incredible, and far surpasses anything that is known in Europe. Thus, in 1861, there were in the State of New York 11,750 public schools, for 3,880,735 inhabitants, that is, one school for about 300 persons; in Massachusetts, 4,605 schools, for 1,231,066 inhabitants, or a school for 270 persons. In the Western States the proportion is still more favorable, for in Ohio we find a school for 160 inhabitants; in Illinois, one for 150; in Wisconsin, one for 130. According to the last report for 1865, France has 38,386 public schools for a population of 37,382,225, that is, one school for 784 persons. Thus she is doing only one-seventh as much for the education of her citizens as these new States founded but a few years ago in the distant prairies of the far West, where lately the bear and the buffalo ranged. To rise to the level of America, France ought to have 200,000 schools, instead of 38,000, and few of the European States can show more favorable figures.

Who are the authorities that have charge of American schools? We find here an organization entirely different from anything that we know; there is no trace of that ponderous machinery, by means of which, in the old world, the will of the sovereign is transmitted to all parts of a vast kingdom. In America there are only local committees, chosen independently of each other and responsible for their action solely to public opinion, or, indeed, to justice in case of a violation of law. First, there is the district committee, sometimes called prudential committee, sometimes committee of trustees. Chosen by the votes of the district, their business is to attend to the building and repair of school-houses, to elect teachers, to examine schools, and to keep them in good condition. The local committee is not numerous; it is composed at most of three members, of three trustees in the State of New York, and even of a single person in some other States. They are generally chosen for but one year. They are expected annually to summon the voters to a public meeting to give account of their doings, and to answer any questions that may be asked.

It is their duty to transmit to the Board of Education a report of the condition of their district. Next in order is the town committee. They receive the State fund and the local taxes, and apportion them to the districts as nearly as possible according to their needs. They examine candidates for the office of teacher, and give them the certificates which they must receive before they can be appointed by the prudential committee. They decide upon text-books and methods of teaching, and examine regularly the different schools. In a word, to them is intrusted the moral and intellectual direction of education.

The central figure of the system is the Board of Education, at the head

of which is an officer of high rank, the superintendent of public instruction. In some States, as in that of New York, the superintendent is chosen by the legislature ; in the West, he is elected at the same time as the governor by all the voters of the State. It is an emphatic proof of the high esteem in which education is held, that his salary equals, and in some cases exceeds, that of the chief magistrate of the State, particularly in the new Western States—Illinois, Michigan, Wisconsin. However high his position may be, he can exercise no authority over the local committees, who are in no respect under his jurisdiction. His office is simply to enlighten the legislature and the community at large upon all matters pertaining to education. He collects statistics, visits schools, and endeavors by meetings and addresses to increase public interest in the department which he represents. Every year he submits to the legislature a detailed report of the condition of education in the State. This document is distributed in large numbers throughout all the districts. The defects or faults of the prevailing systems are frankly exposed, and needful reforms pointed out and urged. Some of these reports, especially those of Messrs. E. Potter of Rhode Island, and Victor Rice of New York, Horace Mann, and Henry Barnard of Massachusetts, are admirable productions which cannot be too carefully consulted. The beauty of the paper and the printing, the elegance of the binding, everything, even to these minute details, show that the object is one dear to the heart of the whole nation.

Two features in the organization just described are worthy of note. The first is the application of the economical principle of the division of labor. In Europe, the regular officers of government take charge of elementary education ; in America, certain individuals are specially appointed to devote themselves solely to school matters. The advantage is that men of the right endowments can thus be selected, intrusted with a specific duty, and held directly responsible for all their actions. It is the surest way of deriving the best results from the agencies employed. The second point to be observed is, that the only spring that moves the whole is public sentiment. Public speaking and the press are the impelling forces. The superintendent, whose influence is very great, exerts it upon legislators, committees, and voters, upon the latter of whom everything ultimately depends, only by his spoken and printed words. Persuasion does everything, Compulsion nothing. This system requires more intelligence and demands more effort than the European, but it is far more efficacious, because it is supported by the cordial enthusiasm of all. To adopt it at the present time throughout Europe would be premature ; to aspire to it would be at once honorable and advantageous.

The school-buildings differ in appearance according to the age of their respective States. In the West, in the midst of families hardly settled

upon the soil which they are conquering for civilization, they are little more than rude log-huts. In the rural portions of the East, they are plain, one-story houses, healthfully located in some pleasant grassy spot, and adorned with flowers and grape-vines. In the cities, as Philadelphia, Boston, and New York, they are handsome three-story buildings, where everything is admirably adapted to the purpose for which it is designed. To form an idea of the arrangement of these edifices, let us enter one of the new school-houses of New York. The ground-floor is occupied by a large hall designed for a play-room and by the janitor's rooms. In the first story, six small class-rooms, 16 feet by 23, open into a large central hall, 45 feet by 65, the reception-room, where at certain hours all the pupils assemble to perform certain exercises together; in the second story, are ten more class-rooms; finally, in the third, a reception-hall and six class-rooms as in the first. The whole building is warmed by steam and thoroughly ventilated. Croton water is carried to each story. Each pupil has a desk of varnished wood and a seat by himself; the whole presents a tasteful and elegant appearance, and there are accommodations for 2,000 children. The class-rooms and reception-halls contain a complete library, maps, globes, small collections in different departments of natural history, various manufactured articles, and even a piano. In a single year (1861) the city of New York appropriated 6,500 dollars to the purchase of these instruments, which are a source of great pleasure to the children. It is expected in the United States that every school will have its library, the books of which are lent to the pupils out of school-hours. Most of the States have voted for this purpose a special fund to be divided among the districts, which, on their part, raise money for the same purpose. The school libraries of the State of New York already own a million and a half of volumes, which for 11,750 schools, makes 1,300 volumes each.

The efforts made in America of late years to improve school edifices are almost incredible. An unparalleled enthusiasm has been displayed. In New York, for example, within ten years all the old school-houses have been rebuilt and enlarged, and twenty-five new ones erected, capable of accommodating from 1,500 to 2,000 pupils each. In nine years, from 1853 to 1861 inclusive, the expense for this item amounted to 1,472,000 dollars.

As with plants, neglect or care in their tender youth contributes principally to their decay or flourishing: so without doubt the training and education of boyhood, and even at an earlier age, even if it is unobserved and is noticed by no one, has an influence not equalled by the most persevering and assiduous industry in after years.

A JOURNEY TO ASHANGO-LAND.*

EXCEPTING perhaps Bruce, no traveler of modern times has been so rudely assailed as Du Chaillu. His course lay in regions previously unvisited. He discovered strange tribes of men, and wonderful species of animals. His statements were so novel, and from their novelty so incredible, that many pronounced his narrative a tissue of falsehoods, and his journey a fiction. Although hurt to the quick by these ungenerous criticisms, he cherished no malice towards his detractors, feeling assured that eventually the truth of all that is essential in the disputed statements would be established. His work on "Equatorial Africa" led the French Government to send an expedition to explore the Ogobai River. The results amply confirmed De Chaillu's assertions, and encouraged him to take the revenge he had long cherished—to undertake a second journey into the interior, with better preparation than on his first attempt.

In his preparations for his second expedition, Mr. Du Chaillu was cordially assisted by Dr. Owen, and the Council of the Royal Geographical Society. Other persons rendered him valuable aid by instructing him in the use of astronomical and photographic instruments. It was his hope that he might in this journey fix with accuracy the geographical positions of the places he had previously visited, acquire new specimens in Natural History, and possibly reach, in the far interior, some tributary of the Nile, by which he might descend to the great river and thence to the Mediterranean. Fernand Vaz, on the river of the same name, was to be his starting point.

Having completed his arrangements, he embarked, August 6th, 1863, on the schooner *Mentor*, for Fernand Vaz, where he arrived October 10th. Here he was immediately recognized by the natives, who in token of their joy at his arrival, lit up bonfires along the beach and gave themselves a general holiday. For several days the breakers were so bad that disembarkation was impossible, but it was begun October 15th. The baggage was placed in three canoes; two reached the shore in safety, but the third, containing all the instruments, medicines and more important stores, besides the traveller himself, was upset in the breakers by the negligence of the men, and Du Chaillu narrowly escaped with his life. By this misfortune his instruments were lost or permanently disabled, and such of his stores as were saved were of little use. To go on now was impossible, and nothing could be done but to remain at Fernand Vaz until the *Mentor* could proceed to England and return with a fresh outfit.

During this enforced delay, Mr. Du Chaillu made a number of short excursions to explore the surrounding country north and south, and to gain further information respecting the gorilla and other animals mentioned in his previous work. During one of these excursions he was fortunate

* A JOURNEY TO ASHANGO-LAND. By PAUL B. DU CHAILLU. New York: D. Appleton & Co. 8vo. pp. 501. $5.00.

enough to secure several specimens of a new species of the genus *Manis*. He thus describes this strange member of the ant-eater family. "The next morning I went with a number of men in search of the *ipi*. From the description given me by the natives, I was sure that I had never met with this species, and had some hopes of its being new to science. The pangolin genus (*Manis*, of Zoologists) to which it belongs, is a very singular group of animals. They are ant-eaters, like the *Myrmecophaga*, of South America, being like them quite destitute of teeth, and having a long extensile tongue, the extremity of which is covered with a glutinous excretion, by means of which they catch their prey. But whilst the South American ant-eaters are clothed with hair like ordinary mammalian animals, the pangolines have an armor of large scales, implanted in the skin of the upper surface of the body from the head to the tip of the tail, and imbricated or overlapping, like the slates on the roof of a house. The animals look, at first sight, like curious heavy-bodied lizards, but they have warm blood, and nourish their young like the rest of the mammalia. The *ipi* lives in burrows in the earth, or sometimes in the large hallows of colossal trunks of trees which have fallen to the ground. The burrows that I saw were in light soil on the slope of a hill. There are two holes to each gallery, one for entrance and the other for exit. This is necessary, on account of the animal being quite incapable of curving its body sideways, so that it cannot turn itself in its burrow. The bodies of pangolins are very flexible *vertically*, that is, they can roll themselves up in a ball, and coil and uncoil themselves very readily, but they cannot turn round within the confined limits of their burrows. In hunting them, we had first to ascertain by the foot-marks, or more readily by the marks left by the trail of the tail, which was the entrance and which was the exit of the burrow, and then, making a trap at one end, drive them out by the smoke of a fire at the other ; afterwards securing them by ropes. The freshness of the track told us that the animal had entered its burrow the previous evening, for I must add that the *ipi* is nocturnal in its habits, sleeping in its burrow throughout the day. When it wanders by night, the natives say they can hear the rattling of its large scales." The largest specimen of *ipi* secured by Mr. Du Chaillu was an adult female, four and one-half feet long. Its skeleton and skin were sent to England, and were described by Dr. Gray, under the name of *Pholidotus Africanus*.

He was also fortunate in discovering a new variety of chimpanzee, called by the natives, Nkengo Nschiego. It differs from other varieties by the yellow color of its face : the common variety being black. Like the Kooloo Kamba, of which Du Chaillu was unable to secure a specimen on this journey, it forms bowers of branches of trees, at a height of twenty or thirty feet. The roofs are well constructed, and protect the inmates from both heat and rain. During these excursions, the explorer observed many

facts which led him to modify some statements he had made respecting the gorilla. This animal is exclusively vegetarian: an adult female can be taken alive if severely wounded; the gorilla is more gregarious than he supposed; twice he saw herds of eight or ten females under circumstances which led him to believe that the males were not far off, concealed in the forests. The gorilla is a timid animal, seldom acting on the offensive, and seldom defending itself except when escape is impossible. Several young ones were captured alive, one of which was shipped for England, but died on the voyage. Young gorillas are uniformly untamable, a striking contrast to the chimpanzee, which at almost any age can be rendered docile and familiar.

On the 30th of June the *Mentor* returned to the Fernand Vaz, bringing goods and stores for which Mr. Du Chaillu had written, and also a fresh supply of instruments to replace those which had been spoiled or broken. Some time was necessary to fit the collections in Natural History for transportation to England, and it was not until October, a year after his arrival, that Du Chaillu found himself ready to start for the interior. His stores and outfit consisted of forty-seven large chests of goods, besides ten boxes containing his photographic apparatus and chemicals, and fifty voluminous bundles of miscellaneous articles. He had also five hundred pounds of powder, three hundred and fifty pounds of shot, and three thousand ball cartridges. As no beasts of burden are found on the coast, a hundred men were required to carry the baggage. Of these, ten formed his bodyguard. His chief man, Igala, was a stalwart negro, courageous as a lion, but submissive to his master. He was moreover a useful assistant, having been taught to skin and preserve animals. The Commi, or coast people, believed that the expedition was to cross overland to England. This was the inducement which led most of his band to join it, and the commander made no attempt to disabuse their minds.

On the 15th of October the expedition reached Goumbi, on the River Rembo, the residence of Du Chaillu's old friend Quengueza. This old prince behaved right royally. His kindness became at length an inconvenience, as he was continually inventing expedients for prolonging their stay. On the 28th of October they left Goumbi, and on the 30th arrived at Obindji, at the confluence of the Ovenga and Ofoubou rivers, where they were detained seventeen days before matters were in readiness for proceeding to Olenda, the chief city of Ashira-Land.

During their sojourn at Olenda, small-pox broke out: one of the porters died, and the disease spread among those attending the funeral. Owing to the lack of quarantine regulations, the scourge soon became general. The superstitious negroes charged Du Chaillu with introducing it; all his porters left him, and his journey seemed to be at an end. But Quengueza and King Olenda defended him, denying the groundless belief.

The plague continued its ravages until it ceased from sheer want of victims. Olenda, his wives and his nephew were carried off by it. The once cheerful valley of Ashira became a gloomy house of the dead: each village was a charnel house. The poor victims of the loathsome disease in all its worst stages, lay about in sheds and huts. The stench in the neighborhood of the huts was insupportable. The explorer bewailed his hard fate, and wished himself back amid the health and comforts of Europe.

In March, after many months of weary delay, the expedition left the Ashira settlement. After undergoing many perils, and suffering much from fatigue and hunger in passing through Otando and Apono, Du Chaillu reached Ishoga-Land. Here at Yengue he had the good fortune to discover a settlement of Obongos or dwarfs, of whose existence he had heard from the natives. The average height of this race is, males 4 feet six inches, females, 4 feet five inches. These people are exceedingly timid, and it was only with the utmost difficulty that three or four could be persuaded to approach the travelers.

Leaving Ishogo, the party reached the village of Mouaou Kombo, in Ashango-Land, on July 21st. Here by an untoward accident the expedition came to an untimely end. A gun was accidentally discharged and killed a man and the head wife of a friendly sub-chief. The war-cry was immediately raised, and Du Chaillu was compelled to retreat. The return journey to the coast was accomplished without loss of life to members of the expedition; but to secure safety, it was necessary to throw away all the baggage, and the leader himself had to part with his rifle. All the collections in Natural History, and all the photographs were lost. Du Chaillu had kept three copies of his journal. Of these two, and one volume of the third, were lost. The work is therefore incomplete in the records of latitude and longitude.

In the twentieth chapter, the author sums up the results of the expedition. Throughout the whole explored region there were no beasts of burden, no truly domesticated animals, except goats and fowls. Eight species of monkeys were found. These are used as food by the inhabitants, and many fall a prey to the guanonien, a large eagle rivalling the condor in size. Of the anthropoid apes, five species or varieties occur. The land is mountainous, and in the interior rain falls almost continuously. The inhabitants are gloomy, and cherish an ineradicable belief in witchcraft. Property is insecure, and there is no punishment for robbery. As to the future capabilities of the negro, the author is doubtful. He believes the negro may be advanced to a higher standard, but if left to himself he will soon fall back into barbarism. He is the most tractable and docile of all races, and possesses excellent qualities which in great measure compensate for his bad ones. Ultimately he must disappear from his land, and follow the inferior races which have preceded him.

Mr. Du Chaillu deserves great credit for the patience with which he sustained the bitter attacks of his enemies, and for the mildness with which he offers facts confirmatory of his previous assertions. His narrative is an important contribution to the geography of Africa. The appendix to the work contains, among other valuable papers, a monograph, by Prof. Owen, on three skulls from Western Equatorial Africa.

SELF-CULTURE.

THE power that lifts the scholar to a high vantage-ground, whence he can survey each field of human effort, and make his influence widely felt, lies in his effective skill at organizing thought and knowledge. The mind secures the development of its innate power as an organizer of knowledge, by carefully studying the rationale of its closer method, by frequent practice and collision with other minds. The easiest and surest way of reaching this development of intellectual power is found in such public courses of discipline as are pursued at seats of liberal study. But wherever obtained, the main struggle for intellectual power must be made by him who is to own and use the power.

The term, *self-educated*, is sometimes ostentatiously employed in speaking of men who have gained any considerable amount of mental force and wealth, without resorting to public institutions. There is a falsehood in the insinuation conveyed by this use of the term *self-educated*. It implies that those who pursue their studies at a public institution are not indebted to themselves for their acquisitions and mental power. It implies that the graduate of an Academy or a College is not self-educated: that he comes by his stores of learning as he comes by a load of wood; that he pays the market price, and has the learning dumped at his feet.

This, of course, is the sheerest nonsense. No one ever yet distinguished himself as an organizer of knowledge, as an intellectual worker, and a putter-forth of intellectual power, whose training had been on his own side a passive process. Sooner might the fabled Danaides have drained a river with their perforated dippers, than would an intellect reach the point of holding ideas, and wielding them with effect, if they were to be received by the simple power of absorption, without that healthy digestion and assimilation which are as essential to mental as to physical growth.

For this reason, seats of learning are far from professing to own any labor-saving machinery that can avail; by its unaided working, to elevate to the scholar's dignity and power those who remain in the supineness of an unwise and unmasterly inactivity. Public instructors are not post-coaches to carry indolent passengers, but rather guides to direct toiling pedestrians.

They only assume to facilitate the progress of the student, to furnish him with needed directions and means of wholesome self-culture, to tell him what to acquire and how to acquire it, while they leave the great burden of his training with himself, where it rightfully belongs. They leave with the student what in fact they cannot take from him, the responsibility of deciding his own intellectual rank, and of settling for himself the question whether he will be the owner and user of intellectual power. They point out the rich placers where mining will be successful, and explain the process of testing ores, while they leave the hard digging and sweat, and the washing of auriferous sand, to those who are to pocket the proceeds. Skillful educators are often instrumental in preventing waste of precious time, misdirection of mental energy, and distortion of mental development. Thus guided, the faithful student secures to himself a self-reliance that never staggers, a thirst for conquest that snuffs the battle afar, and a well-balanced, sturdy intellect that knows its strength, and sustains him gallantly in every encounter with falsehood and sophistry.

One who is educated alone, monkishly and by private tutors, may know a vast deal about books and abstract science, yet be wholly unprepared for "the world's broad field of battle." The best books and systems of practical science need the keys of personal observation and experience to unlock their richest treasures. The hermit scholar will know much less about men than the graduate. He will be far more liable to go astray in the choosing of his profession, or in arming himself with the weapons of professional warfare. He will be exposed to failures and mortifications like those which Demosthenes experienced, when he went before an Athenian audience for the first time.

Our seats of learning are not so much places for putting forth the mind's acquired and measured power, as for searching to find out where the power lies, and what is its nature. It is one of their peculiar advantages, often overlooked, that they give the student that acquaintance with himself, his hidden strength and aptitudes, which ought to direct him to the choice of a congenial profession. His most valuable text-books are the faces and voices of his classmates. Day after day, he is with them under circumstances that bring into sharp contrast the salient points of his own mind and character. He mixes with them frequently and intimately in the class-room, on the play-ground, in long walks, by the study table, in the circles of debate and competition. He wrestles with his fellows in the noble and keen strifes of excited intellects. Wit is sharpened by wit. Faults are freely criticised. Failures are pleasantly laughed at. Happy efforts and palpable hits are applauded. If, at the end of his academic years, he is still in doubt whether he can do one thing better than another thing, it must be because he is a universal genius, and good at anything.

SOLOMON'S WORDS CONCERNING THE ROD.

THE practice of using the rod as a means of discipline still obtains among many whose feelings are averse to it, because an accepted traditional interpretation of certain words of Solomon seems to impose the practice upon them as a duty. Believing that Solomon by inspiration of God teaches that without the application of a literal rod upon the body of a young wrong-doer, correction cannot be secured and the child will be spoiled, they set themselves gravely about the task of inflicting the bodily pain, and, whether the wrong doer is corrected or remains incorrigible, try to think they have at least done their duty. The gloom that the process casts upon the household or spreads throughout the school, is gilded, as they try to believe, by cheering rays from the act as proceeding from a spirit of fidelity; while the actual state of mind produced in the whipper is either one of sadness in view of having been cruel and having excited the child's dislike, or of gloomy satisfaction in having given the child its deserts. The latter state of mind is a peculiarly dangerous one. The feeling is incipiently murderous, growing with repetition of acts. It is a feeling that needs to be restrained by fear of the law. The rod is only a sword that is not easily capable of cutting to the vital part, but which sometimes seeks the vital part by continuance of application. The Lindsley case is an example. Numerous similar cases, which never leave their own darkness for eyes to look upon them, no doubt occur.

But thousands of Christian people who do or do not use the rod, wish in their own hearts that Solomon had never been inspired to say, "Spare the rod and spoil the child," as the wise man is commonly misquoted. This phraseology is nowhere to be found in the writings of Solomon. Still perhaps it conveys a part of the literal signification of certain words of his upon which it is supposed to be founded; the words reading thus: "He that spareth the rod hateth his son: but he that loveth him chasteneth him betimes;" and perhaps the following: "Withhold not correction from the child: for if thou beatest him with the rod, he shall not die. Thou shalt beat him with the rod, and shalt deliver his soul from hell." (Prov. xiii. 24, and xxiii. 13, 14.)

Supposing the word "rod" to be used here literally, then we have to consider the precise conditions under which it is to be used. If inspiration teaches that the rod is to be used, we ought carefully to consult inspiration to find out how. It is obvious, certainly, that inspiration cannot teach that correction is to be sought by the infliction of bodily pain, when it can be secured without it. That would be teaching the practice of cruelty for the sake of cruelty; while we read of Him who inspires, as being love itself. Reason is to be used to its utmost capacity in devising a way of securing correction without inflicting bodily pain. It is not

pleasant to have to state frankly that the customary method, where the rod is used, is to apply it to any wrong doer as a matter of course, when the wrong doing is aggravated, and frequently when it is not aggravated. A schoolboy disobeys a rule: put him to physical pain on the principle that the burnt child dreads the fire. Sometimes the case is that of a girl. To wit, the Cambridge case. Or a child will not say his prayers at the command of his parents. Whip him till he does. To wit, the Lindsley case. Necessarily the principle of reaching the child through the affections is ignored; or he is not supposed to be thus reachable. He or she is presumed to be a little barbarian whom brute force alone will finally control. For it must be acknowledged that the rod is for the brutish, not for the affectionate and rational.

"A rod for the fool's back," says Solomon. But be sure that the child is a "fool." Another passage probably defines the word "fool." "A rod is for the back of him that is void of understanding." (Prov. x. 13, and xxvi. 3.) This brings the application of the rod within very narrow limits. Those who, when they have done wrong, are devoid of understanding so that they do not perceive that they have done wrong, are exceedingly rare. The subject of discipline is not devoid of understanding, but is in such a state of mind that he will not acknowledge that he has an understanding of the case. He is angry, sullen, perverse, rebellious, and, because convicted, and besides, perhaps, threatened as a horse or an ass (Prov. xxvi. 3) is threatened, he feels insulted and is revengeful. According to Solomon himself, this state of mind does not warrant the application of the rod.

We are arguing upon the basis of the meaning of Solomon's words, or else we might enlarge here by trying to find out why. We might consider that blows make the passionate more passionate, and that disgust and dislike rise to the mind even with the memory of them in after days, or months, or years; and that the cases in which, in after time, one who was once whipped, assures his whipper that he bears for him no feelings but those of kindness, are to be referred to the workings of a generous nature which forgets the injury in view of the good that was by other means bestowed. And we might show that where the understanding is present it asserts its title to respect through all its outward covering of passion, so that the rod is sure to convey an insult because it is brutish and for brutes and "fools." (Prov. xxvi. 13.) The rod hardens.

The passionate state of mind, unaggravated, is transient. Generally, when it is passed away, the understanding is ready to manifest itself at the touch of rational kindness in acknowledgment and repentance. Sometimes, however, there remains a self-willedness which haughtily refuses to make any acknowledgment or concession, which holds that no wrong has been done, and which claims a renewal of companionship without yielding

to any feeling of repentance. Such a state of mind in a child is unquestionably a dangerous one. It is likely to lead to delusion; to blind the understanding, and to provide therefor an imitative counterfeit understanding which shall assure the mind that wrong is right and right wrong. The results of leaving the child in this state of mind are likened by the wise man to death itself; they are such as hate and not love would work out upon its object. "He that spareth the rod hateth his son; but he that loveth him chasteneth him betimes." (Prov. xiii. 24.) "Withhold not correction from the child: for if thou beatest him with the rod, he shall not die." (Prov. xxiii. 13.)

Chastisement is requisite; but if these passages apply to the case then is the word "rod" not used literally but figuratively; for it has already been seen that so long as the understanding remains, the literal rod is not to be used. What then is meant by the rod, here? What is meant, as we understand it, is the rod of the child's own mind. Let the child see that there can be no return to peaceable feelings and relations between him and the one with whom he has to deal until he is heartily sorry for his wrong doing, and feels like turning from it with the resolve to avoid repeating it. So long as the separation lasts there will be mental pain. Let the pain continue. Spare it not. Beat with this figurative rod until it shall conquer. Then let the child experience the joy of reconciliation. The lesson will be a powerful one, not readily to be forgotten. Good will, affection even, is presumed here to exist between the child and his master. He who has failed to secure this is not fit to be called master.

"Solomon's words have brought many a child to grief," remarked a venerable man in our hearing, with an emphasis that denoted his suspicion of the correctness of the popular interpretation of the words. His mind was traversing the past, examining its lessons of experience and observation.

If the water runneth, it holdeth clear, sweet, and fresh; but stagnation turneth it into a noisome puddle. If the air be fanned by winds, it is pure and wholesome; but, from being shut up, it groweth thick and putrid. If metals be employed, they abide smooth and splendid; but lay them up and they soon contract rust. If the earth be labored with culture, it yieldeth corn; but, lying neglected, it will be overgrown with bushes and thistles, and the better its soil is, the ranker weeds will it produce. All nature is upheld in its being, order, and shape by constant agitation; every creature is incessantly employed in action conformable to its designed use. In like manner the preservation and improvement of our faculties depend on their constant exercise.

A PLEA FOR A NEGLECTED STUDY.

THE fact that most of our Colleges are organizing Scientific Departments, or introducing Polytechnic courses, having reference to the training of students for the pursuit of Commerce, Agriculture, Manufacturing, Engineering, Architecture, Mining, etc., would seem to be a confession that the old curriculum of studies made up of the Classics and Mathematics in about equal parts, with a varying ratio of Metaphysics and Chemistry, does not adequately meet the requirements of the rising generation. I have no spite against Greek or Latin, nor would I with Sir Wm. Hamilton depreciate the study of Mathematics, yet I heartily rejoice at the new era in education upon which we seem to be entering, and trust the leaven may permeate our whole educational system. As a contribution to this end, let me raise the question :—if in our schools of a lower grade there be not needed a somewhat similar readjustment of the course of study? While no less attention shall be given to the studies usually pursued, would it not be possible and desirable to give much more attention to the study of the natural and practical sciences? With the exception of two or three branches, Natural Science is not taught in our schools, academies, and even in most of our colleges. Natural History in particular, is almost totally neglected. Even among those who have had good advantages of education, it is difficult to find one who can estimate the worth, or even call by name the commonest of our minerals; who can scientifically distinguish one bird from another, or classify the fish he delights to catch, or who can tell the transformations of the mosquito that disturbs his sleep. The amount of ignorance in respect to nearly every department of Natural History is truly amazing, among a people giving the attention to education that we do. In this respect we have very much to learn from the school systems of Germany and Holland, if not from Mother England.

These neglected branches of Natural History should be taught in our schools for the reason that they are *disciplinary*. This has ever been the plea why the Classics, Logic, and Higher Mathematics should be studied by all, whether their taste would incline them to them or not. They must be studied because they are invaluable for the exercise and training of the mental faculties. And this is indisputably true. Now we claim for the Natural Sciences, especially the classificatory ones, a place in our courses of study for the very same reason. As disciplinary of faculties most used in after life, faculties which are called into exercise by scarcely any of the studies usually pursued, these sciences deserve attention in every well organized school.

The basis of the classificatory sciences is wide and accurate observation. Their study calls for the daily exercise of the perceptive faculties. The

student of them soon comes to see more of the objects about him than he once did, and as he continues the study, close and accurate observation becomes a habit. Nor are the perceptive faculties alone thus exercised. The adjusting of the facts of observation into a system, and the constant testing of the system's soundness, is an exercise of thought and reflection, as disciplinary as Mathematics or Logic. It is in fact a mental exercise of the same character—only in its particular form nearer akin to the processes of thought demanded in the exigencies of practical life.

But besides the disciplinary worth of these studies, they deserve attention because of the *practical character* of the *knowledge* they afford. They furnish information respecting the nature and worth of natural objects with which we are all more or less intimately called to deal. Very much of the knowledge they impart is of great economical value. A gentleman of my acquaintance, who by his business abilities has amassed a considerable fortune, recently sunk a couple of thousand dollars from the mere want of a knowledge of Mineralogy. He was induced to invest in the opening of what he supposed a gold and silver mine. Had he possessed any knowledge whatever of minerals, a single specimen of ore would have shown him, what was obvious to the merest tyro in Mineralogy, that the gold was "fool's gold," and the silver only galena, with no more silver in its composition than this ore of lead usually affords. This is an extreme case, but ignorance of the value of ores, and the per cent. of metal necessary to make its extraction remunerative, is what causes thousands of dollars to be squandered every year in mining stocks, which can never pay a dollar of legitimate profit to the investor. Were even a moderate knowledge of Mineralogy diffused among the people, the days of fancy mining stock companies would be numbered. Not only would a general diffusion of such knowledge be a safeguard against deception, but it would contribute to the general wealth of the country, by ensuring the intelligent development of our great mineral resources.

Many a farmer has valuable mineral substances underlying his fields or cropping out upon their surface, of the value of which he is totally ignorant. Swamps have been gladly sold for a trifle, whose treasures of peat made them worth more than the entire farms of which they were deemed the worthless part.

It could be shown that a knowledge of Entomology and Ornithology is not less directly of practical and economical value. When we contemplate the ravages to which nearly every description of vegetation is exposed from insects, and remember that some insects are the chief foes of others, and that some birds are our best allies in resisting these annoying enemies to profitable horticulture or farming, it does not require an argument to convince us that it is desirable for us to know our friends from our enemies. And as nearly every one has, or hopes to have at some

time or other, an interest in the soil and its products,—a knowledge of nature and its laws must be in its very character of pre-eminent utility. An incidental advantage of the introduction of these studies in our schools, would be the affording of *recreation* for out of school hours, at once healthful, innocent, and interesting. No one on beginning the study of Natural History, in any of its departments, can fail to become a collector of specimens. The student wishes to apply and test his newly acquired knowledge, and this will send him abroad into the fields and woods—culling flowers, gathering stones, and hunting bugs and birds. In this pursuit he will find not only instruction, but health and amusement, and he will find neither time for, nor be tempted into, those questionable kinds of fun in which school-boys are so apt to indulge.

Of the exalted ideas which the student of nature gathers respecting the *wisdom* and *goodness* of God, it is not needful I should here speak. It is apparent that if God has revealed himself in nature as well as in revelation, the more we know of its wonders, the more will we know of Him who in mercy and wisdom has made and governs its every part. He who goes abroad in nature and carefully observes, will find with the poet—

> "Lessons in trees,
> Books in the running brooks,
> Sermons in stones, and good in everything."

In view of these considerations, ought not a place to be assigned to the study of Natural History in all our schools? But is it practicable? some teachers will ask. Have we not already more studies in our courses than we have time to teach properly? Perhaps so,—but let me assure you, greater thoroughness in your teaching will greatly help, if not remove this difficulty. And if not, you only have need to re-arrange your course of studies, and if necessary lengthen the time for completing your course. But we have no text-books? The beginning may be made without text-books. The Book of Nature is always open, and under the guidance of an intelligent teacher, pupils may begin at once to read it. The foundation of an appreciative study of nature must be laid out of doors. This done, text-books and books of reference will be demanded, and the demand will create a supply.

Education and instruction are, according to the use of language, two different things; the former including the whole physical, moral and intellectual development, but the latter applicable more properly to the training of the intellect. Instruction must include everything which relates to the development and training of the man and the citizen.

PUGGE.

CHARACTERS:

PROF, *a School-boy, of professional ambition.*
PUGGE, *a School-boy, of poetical ambition.*
NED, JUDGE, } *School-boys.*
MR. WIMPLE, *Teacher.*
SCHOOL-BOYS.

SCENE—*A School Room.* TIME—*Recess and part of a Session.*
(*On the black-board is a rough sketch of a pile of books, the largest book at the top.*)

(*Enter* NED, PROF, JUDGE, *and a throng of School-boys.*)

Ned. O, say Prof, Pugge's getting out a new poem.

Judge. Ha, ha! Is he?

Ned. Professor seems to be very glum over the news. Guess he's getting out a new Greek Dictionary. Professor Prof's Greek Lexicon! How would that sound?

Judge. Ha, ha, ha! What words wouldn't be in that book wouldn't be worth knowing.

Prof. Well, I don't think you ought to make sport of one who wishes to be something.

All. Ha, ha, ha!

Ned. Positive, Prof; comparative, Professor; superlative, Professissimus!

Prof. That's *mean!*—You ought to encourage—

Judge. Nominative, Prof; Genitive, Profis; Dative, Profi; Accusative, Profem; vocative—

Prof. I won't stay here to be made fun of! (*Exit.*)

All. Ha, ha, ha!

Judge. Look at that drawing on the board. (*Pointing as he calls off the names.*) Halleck, Bryant, Tennyson, Longfellow, Schiller, Goethe, Mrs. Browning, Milton, Shakespeare, *Pugge.* Ha, ha, ha! Pugge crowns the pile; and what a volume!

Ned. Bigger than Shakespeare!

Judge. And better!—Pugge's the great poet of the world!

All. Ha, ha, ha!

Ned. Here he comes. Hush! He has his new poem, and is reading it over and over to himself. Let's get away and listen. (*They conceal themselves.*)

(*Enter* PUGGE, *looking at a Manuscript.*)

Pugge. (*Reads.*)—Whilom, the hoary minstrel rose—

Ned. (*Aside.*) "Whilom"—what a word!

Pugge. That sounds well. That is *Miltonic*, and Homeric, too.

Judge. (*Aside.*) Miltonic and Homeric!

Pugge. "Whilom,"—"whilom."—That's a good word. It has a famous sound. It is used only by great poets. (*Reads.*)

Whilom, the hoary minstrel rose—.

Judge. (*Aside*). And sounds a blast upon his nose!

Ned. Ha, ha, ha!

Judge. (*Aside*). Keep still, Ned, won't you!

Pugge. (*Reads*). Whilom, the hoary minstrel rose,
And sang the regions all afroze.

"Afroze;"—poetic license. A fine word that!

(*Reads.*) Wild swept his fingers 'cross the chords,
And worshiped the barbarian hordes.

True poetry is deep. Everybody won't understand that verse!

"And worshiped the barbarian hordes."

Now a good many won't know whether I mean that the fingers worshiped the barbarian hordes, or the barbarian hordes worshiped the—well, what? Even I myself, the very writer of the poem, don't clearly see what; and if it is so deep to me, how much more to others!—

Judge. (*Aside.*) Hush! he's at it again. Take it down on paper, Ned, and we'll howl it at him sometime.

Pugge. (*Reads.*) Ha, how the moon shone in the hall,
Glistling adown the warriors tall—

Ned. (*Aside.*) Do you hear that Judge? "Glistling adown!"

Judge. (*Aside.*) Of course I hear it.

Ned. (*Aside.*) There he goes again. No, he's looking up.

Judge. (*Aside.*) He's weighing that last. "Glistling adown!"—

Pugge. "Glistling adown." Now if ever poet contrived such a word as that before, I have yet to know him. "Glistling." That word is the product of genius. And those two words together, "Glistling adown," why—why they'll roll through the world like—like a bolt from the vista of sublimity. There's an idea, too—"like a bolt from the vista of sublimity." It is high as the wind, and broad as seas that are swept by Northern blasts. "Glistling adown"—the words will roll through the world thunderously; and upon them will be seen, in letters of living fire, *my* name! How my grandmother will wonder at me.

Ned. (*Aside*). Open the window, fellows; I must yell!—His grandmother!

Judge. (*Aside*). Do be quiet, Ned, till he's through.—Look at him now.

Ned. (*Aside.*) He's lost in seraphic bliss over the prospect of his grandmother wondering at him. Hark!

Pugge. (*Reads.*) Ha, how the moon shone in the hall,
Glistling adown the warriors tall;
As seen upon the spectral light
Of forty thousand in one night!

Now if any one can beat that, I'll be willing to give up my prospect of fame. That is deep. That's true poetry.

Ned. I shall burst!

Judge. Hold in, Ned. Here's Prof. (*Enter* PROF.)

Pugge. Ah, Prof!

Prof. Well, Pugge. Another poem?

Pugge. Yes.

Prof. Let's hear it. (*Pugge reads his verses.*) We must have poets as well as profound scholars and learned men. I am reading Cicero and Livy, Virgil, Lucretius, and Sallust, Homer and Demosthenes; and Mr. Wimple is going to lend me Thucydides.—I'm going to be President of a College.

Pugge. What College?

Prof. That is not decided yet. I like Yale very well, and Princeton. Harvard is a good college. I don't know but I like Harvard best. It's the oldest.—See what is drawn on the black-board!

Pugge. Why, who could have done that? What—they've put my volume of poems at the top! Well, I must say—why—Prof, I do feel the blood in my cheeks! Who would have thought I should be recognized here!

(*Enter* MR. WIMPLE.)

Mr. Wimple. Ah, boys! (*Rings the desk bell, and Prof and Pugge, and the other boys take their seats.*) Prof. (*Prof comes to him.*) I am obliged to be absent awhile, and will thank you to take charge of the class till my return.

Prof. Yes sir. (*Exit* MR. WIMPLE. PROF *seats himself in* MR. PLE'S *chair.*) The school will please come to order.

Judge. (*Rises and declaims.*) Whilom, the hoary minstrel rose,
And—

Prof. Judge will take his seat and come to order!

Pugge. (*Aside*). How did he know of my poem?

Judge. I must practice my declamation.

Prof. Take your seat. (*Judge keeps the floor.*)

Ned. (*Rises and declaims.*) Ha, how the moon shone in the hall,
Glistling adown—

Prof. (*Authoritatively.*) Ned and Judge, take your seats. (*Confusion among the boys.*)

Ned. I want to please my grandmother!—
(*Declaims*). Glistling adown the warriors tall—

Judge. And sang the regions all afroze—

Ned. (*Declaims.*) As seen upon the spectral light
Of forty thousand in one night.—

Judge. (*Declaims.*) Wild swept his fingers 'cross the chords
And worshiped the barbarian hordes.

Prof. I must have order here!

Judge. That's by the class poet. Look at the black-board.

Ned. His grandmother will wonder at him. (*Confusion among the boys*)

Prof. Order!

Judge. It's so deep his grandmother can't understand it.—Those words will roll down through the world like a bolt from the vista of sublimity!

Ned. High as the wind, and broad as seas that are swept by Northern blasts. And the name of Pugge—

Judge. Stamped in letters of living fire, thunderously.—

(*Declaims.*) Whilom, the hoary minstrel rose
And sang of regions all afroze.

Ned. To my Grandmother, namely—hem'm—dedicated.

(*Declaims.*) Ha, how the moon shone in the hall,
Glistling adown the warriors tall;
As seen upon the spectral light
Of forty thousand in one night!

Pugge. (*Rising.*) It's a shame, fellows, for you to make fun of me. It's a shame. You ought'nt to do it! You—

(*Enter* MR. WIMPLE. *All the boys, excepting* PROF *and* PUGGE, *at once look on their books, and seem to be studying hard.*)

Mr. W. What's the matter?

Pugge. They make fun of me.

Prof. And of me, too.

Mr. W. I must enquire into this. Why do they make fun of you?

Judge. Mr. Wimple, it's because Prof puts on so many airs;—he's reading all the Latin and Greek books at once, and Pugge (*snickers*) —Pugge writes poetry!

Mr. W. (*To* PUGGE.) Hand me the poetry. (*Pugge obeys, and* MR. WIMPLE *reads.*) This is nonsensical; no wonder the boys make fun of you. Master Pugge, I speak to you bluntly, in order that you may see your folly, and come to your senses.—And Master Prof, it is better to concentrate your efforts upon the lesson given you in school than to distribute them upon so many books. You must not mistake self-conceit for genius. Be less assuming and you will not be made fun of. And you, boys, must see to it that you do not make fun of Prof and Pugge again till they again make themselves funny.

Boys. We will, sir. (*They applaud.*)

Mr. W. Now let us attend to the recitation.

JOHN BOYD.

CHAPTER XIII.

ON his way back from Deerslaugh on Monday morning, John bought a copy of the Wye *Morning News Letter*, and his eyes fell upon the following paragraph :—"At the monthly meeting of the Wye Institute Literary Society, on Friday evening, Professor Beelen favored the audience with a new and original Shakespearian criticism, showing that the binary system discoverable among the heavenly bodies finds its analogue in the doubling of the principal characters in the tragedies of the immortal bard. We do not doubt that the students of Shakespeare will feel grateful to the learned Professor for his new discovery in the genius of the great poet. The attention and applause which the first divulgence of the discovery elicited from the intelligent and appreciative audience manifested the exalted estimate in which is held the Professor's erudition, and the importance of his scholarly statements. It is hoped that Professor Beelen will issue a paper on the subject of his Shakespearan discovery."

John pushed back his hat and rubbed his brow, with a dreamy recognition of the talk they had had together. "Well, surely, this is making capital out of conversation with a vengeance !—Well, well !" and John re-read the paragraph, this time experiencing a feeling of annoyance. "Plagiarism !" he thought. "Stolen out of my pocket and put into his own ! The thought is of no value, but it is not his !" The train had just left the Comfort depot, where two gentlemen had got in and taken a seat next to John's. One was reading the *News Letter*. He turned and remarked to the other, "Suppose we try to get Professor Beelen, of the Wye Institute, on our lecture list. What do you say ? His name often appears in the papers as a lecturer, and a learned man. Here it is again. He has been presenting something new in Shakespeare." The gentleman read the article aloud. "Well, yes, Darwin," said the other, "we might try him." "Rather an extraordinary man, I should think," remarked Mr. Darwin, entering something in his note book.

John reached Wye at an early hour, and at once proceeded to school. He found the Professor having a game of tag with the boys. It seemed it was his turn to chase. Many of the boys, especially the larger ones, had dropped off from the game and withdrawn to a corner where they stood watching and remarking upon it. The Professor had singled out a small boy, and was chasing him with a playful laugh upon his face. The boy would dodge, and the Professor's momentum would carry him by, and then he would turn with a look of persistent determination and give chase again. It was a pleasant sight—the teacher playing with the pupils !

The small boy was a new-comer too. Presently the Professor caught him, and laughed aloud gleefully. Then he stepped forward, ruddy with exercise, to speak with John. "Ah!" said he, holding out his hand for a shake, "Got back from your visit? I hope you had a pleasant time." "Yes, sir; very pleasant.—It was a brief." "Ah, yes; so it is with time passed pleasantly.—I've been having a little sport here with the boys." "That's a new boy you were chasing, is it not?" "Yes. He comes from a place fifty miles from here. His parents heard of the school, and wanted so to get him into it that they had him come down here to live with his aunt. So much for a good reputation! There's only one drawback to this school, and that is the presence of my female assistant. I have entered a complaint against her, however, and trust we shall soon be able to go on smoothly." "Do you refer to Miss Woodstock?" "Yes. You remember the evening when you first came; how she treated both of us with marked disrespect. That was only a touch of what she is. You remember how she turned upon you that morning when I gave you elocution to teach,—how rudely she spoke to you. That was another instance. There's no living with her. She is very rude. Her example to the boys is bad. They imitate her manners. The moral effect upon the school is ruinous. It was only the other evening that she intruded upon us at one of our meetings, and tried to create disorder." "You have entered a complaint before the Board of Education against Miss Woodstock?" "Yes." The Professor's mouth here lengthened out, and he stooped forward with his face towards John's. John was standing erect looking down at him. "We shall need your help if there should be an examination," said Beelen. "Who will?" "All of us; the whole school; the Board; the public. I have your name down as a witness." "But suppose I do not choose to testify?" "It is for the interest of the community." "Suppose I think differently?" Beelen's lip twitched, and then his mouth twisted into a bunch with a snuffle. "H'm 'm, it seems to me the best policy for every one to do his duty." "Policy?—duty?—I regard Miss Woodstock as without a superior among the teachers of the school. I regard her as indispensable to its prosperity." Beelen's mouth protruded with a threatening aspect. "You must summon other witnesses," said John. "Good morning, sir," and he turned away and went up stairs.

Miss Woodstock seemed to have been on the look out for him. She was in the assembly room close by the door, and advanced to meet him her hand warily half raised, and her face aglow with mixed emotions of eager enquiry and exultant satisfaction. "How do you do?—Have you seen Beelen?" John did not reply to the latter question. "Something is brewing," she continued; "I know there is; he's been trying to be so good to me this morning. When he is particularly good to you then

be sure he has done or is about to do something against you." Just then a boy brought a letter to Miss Woodstock. She took it eagerly, opened it and read. She turned pale and her eyes flashed. "I won't resign!" she exclaimed. "I—will—not—resign!—Here I've been working faithfully for ten years—." Her voice choked and her eyes filled with tears. "Read that," she said, handing the letter to John. It read as follows:—

"MADAM,—Another complaint having been entered to the Board of Education against you, it is the judgment of the committee, appointed to investigate the affair, that, in view of the frequency of these complaints, both formal and informal, you be requested to hand in your resignation as a teacher in the public employ."

"That's peremptory," said John, handing back the letter. "Do you think I'll resign? Not I! He shall appear before that Board to his cost! He has asked an investigation. He shall have it!" Here Professor Beelen entered, passed on to his desk, opened it, and took out a paper. "O," said he, as though reminded of something, and then smilingly approached where John and Miss Woodstock were standing. "Thomas Tisdon's case; I wish to speak with you about that. I always consult with my assistants in cases like this. Thomas Tisdon has been very unruly for a long while, and it seems to me quite necessary that he should be expelled. He has of late fallen into the habit, too, of talking to the boys against the teachers—." "Against what teachers?" asked Miss Woodstock. "Against the teachers," continued the Professor, "and although it is a painful duty to perform, yet, for the good of the school, I must perform it. I have consulted with Mr. Royce, and he thinks it is best to expel him, and—well, I think it is best to expel Tisdon, do you? very well; then I'll—." "Expel him for his good. All the boys talk. Better expel them all. Of course the public owe you support, and so they'll still keep you here on a salary before empty benches—." How long Miss Woodstock could have proceeded in this strain is uncertain. Of course she was liable at any moment to an interruption, and the interruption finally came. It consisted in a majestic lifting up of the Professor's head, and a wrathful outroar which he, on one occasion afterwards, styled a "stern rebuke."

CHAPTER XIV.

WHEN John entered his recitation room with his class, he found a curious drawing on the black-board. "Professor Beelen lecturing," said a boy; and there was a laugh. "Professor Zechariah Beelen, A.M., LL.D., has been lecturing to us on Shakespeare." "Yes; last Friday night. He

gave us some original notes on Shakespear. You ought to've been there." "What does this mean?" asked John. "Look at the board! Look at the board!" John looked and—laughed. "See this," said a boy springing forward with an open newspaper in his hand. "It's in here." He spread the paper out on the desk before John. "I have seen it," said John. "Take your seat." "Yes, sir," and the boy obeyed. "Rub that out," said John. A dozen boys sprang for the rubbers. "One would have done," said John. It was rubbed out in an instant, and the boys were back in their seats again. Then a boy held up his hand. "Mr. Boyd, do you think it does a boy good to flog him to death?" "What do you mean by that?" Instantly many hands were raised, and many voices were explaining. The result was a Babel. "Be still," said John. "He has whipped Crane so that they don't know whether he'll live or die," said the boy who first spoke. Babel came on again; but order ensued at a beck. "Let us have order," said John. "I have been thinking, boys, since we met last, of how we may have better order in this room.—You must be aware that I would seek your welfare without putting you to pain." "Yes—yes," they shouted. "Don't make a noise please.—Well, I think that you would not knowingly do anything to injure me.—I can't speak if you make this noise. There—that boy! Don't do that. (A general moving about, with occasional stamping.) I must wait, I see. (Noise subsides.) There, this is order. Understand now, once for all, what order is. Now let me tell you just how you may best serve yourselves and serve me,—it is by keeping in this very state of order. And during recitation let the whole class be attentive. I want this class to do great things; to shine; if possible, to outshine. You can." John sat down. The boys began to applaud him, but suddenly became silent. The Professor had stolen in. "This noise!" he exclaimed, looking at the class. "Why, I could hear you clear out to my desk!—Charles Silkweed, go into the cap-room!—I'll see!—Go into the cap-room!" Charles went out, and Beelen followed and closed the door. "Balbus wasn't doing anything!" spoke out a boy. Balbus was Charles' nick-name. "Boys," said John," I must leave the room a few minutes. I shall expect you to keep in order during my absence." He went out. Beelen was standing at his desk quite thunderous in aspect. John went up to him. "Had n't I better go into the cap-room and talk with Charlie?" said John. Beelen did not reply. "He has appeared to me," John continued, "to be a boy of good intentions, and I cannot think that he intended to do anything wrong. I might go in and have a talk with him." John stepped towards the cap-room door. Beelen called to him. "Perhaps," said the Professor, looking very white, "if you should go in it might encourage him to contrive a falsehood for the sake of escaping." "O, I guess not," said John. "Well—h'm 'm—I have found in my long experience as a teacher that

the tendency to falsehood is very strong among the young. There is nothing that I could punish a boy sooner for than for lying. One of the boys—I will not tell his name now—said to me the other day that you are no teacher. I punished him for that lie." "Ah!" John moved towards the cap-room door. "Well," said he, "I'll go in and talk with Charlie." He entered. The boy was crying. "Well, Charlie, what have you been doing?" "Nothing. He—he—he only wa—wants to lick me." The boy sobbed convulsively. "Do you go by the name of Balbus?" The boy looked up. "Y' yes, sir." "Well, Balbus, I will see that you are not whipped." John went out and closed the door. He glanced down at his own room door. Three imps were snatching looks through the door window. Beelen again stepped towards the cap-room. John got there first, and put his hand on the door-knob. "You are going in to whip Balbus?" "Whom?"—"Charlie Silkweed. Curious name, isn't it?—You're going in now to whip Charlie Silkweed.—I think I wouldn't." "Sir!" "Well, the enlightened mind of the nineteenth century, you know, seems to be against flogging; the popular sense is so averse to the use of the rod that an application of it might be deemed an outrage. We live in a wonderful age, don't we?—an age which demands that a pupil's reason should be appealed to rather than his body pained—that the law of kindness should regulate him, not the law of fear." "Yes, yes," assented the Professor. "Well," said John, "I will step in and tell Balbus—the boys call him Balbus, ha, ha!—I'll tell him to go back to the recitation room." "Well." (Tone undulatory, soft, humane.) John entered to the boy. "Go back to the recitation room, Charlie; you will not be whipped."

MATHEMATICAL GEOGRAPHY.

ONE of the first studies set before a child on entering school is Geography. And as some knowledge of Mathematical Geography is necessary to a correct understanding of very much of Physical and Political Geography, the pupil is sooner or later overwhelmed with a multitude of hard names and mathematical definitions which, to him, are perfectly incomprehensible: and judging by the jumble made of the subject by not a few writers of popular school Geographies, they are none too well understood by the teachers themselves. By much tedious study the pupil acquires a few vague notions of zones and meridians and parallels; but, though he may be glib enough at reciting the words of the book, his actual knowledge amounts to very little. This any one can test by a few well directed questions to almost any class of pupils—or of teachers either,

for that matter. Put a blank globe into the hands of a class at a teachers' institute, and call upon the members for a statement and explanation of the different facts and principles of Mathematical Geography, and the chances are that a degree of ignorance will be exposed that would astonish one not acquainted with the superficial manner in which the subject is generally studied. They may be familiar enough with the words of the text-books, but of the subject itself, so far as an intelligent understanding of it goes, they are more than likely to know nothing at all.

Where is the fault? With the subject, or with the manner in which it is taught? Many teachers say with the subject, and so omit all consideration of it, as being, under the circumstances, too abstruse for beginners. Yet without some understanding of Mathematical Geography, the more practical and useful portions of the science can never be fully comprehended. Our ideas of the forms and relative sizes and positions of the various natural and political divisions, depend for correctness entirely upon our ability to interpret their pictorial representatives. This ability depends upon a knowledge and understanding of the means employed, and the philosophy of their use. Now if these are properly presented and illustrated, all the essential portions of Mathematical Geography may be quickly learned and easily understood by pupils of the meanest capacity. It is because they are not so presented that the subject is so rarely liked or understood. Teachers and authors forget, or have never learned, that engraved illustrations are intelligible only to the educated sense: that the truth must be known and comprehended, and the constructive imagination well trained, before a figure like that used to illustrate "parallels," for instance, can be seen as a sphere with parallel circles. To a child, it is merely a flat picture with lines that are *not* parallel.

The briefest examination and comparison of our school Geographies, in their treatment of this subject, will explain why its study is so fruitless and unsatisfactory. Any other branch of knowledge, taught as preposterously as this is, would prosper no better. Take up at random any one of our popular school geographies, and it will be an exception if its author has not set out with the apparent assumption that those who are to study it are prepared to understand, or it may be are already masters of, the rudiments of Geometry, Astronomy, and much more that is not reached in the regular course of study until years after Geography is "completed."

For example, McNally says (*Lesson* 1, *Def.* 5): "The shape of the earth is that of an oblate spheroid; that is, a sphere flattened at the poles." Knowing the age at which Geography is studied, and seeing that the words, *oblate, spheroid, sphere* and *poles*, have not yet been defined, we can estimate the degree of understanding of the earth's shape a pupil is likely to get from the definition. Colton says about the same, but takes

care first to define the terms of his definition. Whether pupils will be any wiser for his care we are not prepared to say. Every conceivable change is rung upon this form of words. Occasionally a writer condescends to add that the earth is "round like a ball," or that its shape is "somewhat like that of an orange." But this being within the comprehension of children, especially if an orange is at the same time set before them, fails to satisfy the ultra scientific majority.

A still severer charge may be brought against most of these would-be mathematical definers: Their definitions are rarely mathematically exact. More frequently they are, like the following, comically uncertain: "The circumference of a sphere is the *greatest distance around it*," (*McNally, Lesson* 1, *Def.* 8); from which, we opine, the pupil is sure to obtain about as definite an idea of "circumference" as he would of the size of a certain prize squash from the farmer's boast that it was "so large that ten men could stand around it!"

Colton's definition, "The circumference of a sphere is *any* great circle," is quite as indefinite. Cornell mentions great circles, but does not tell what they are. Warren and some others say that "A great circle is one that divides the earth into two equal parts." McNally states more accurately that "A great circle is one *whose plane* divides the earth into two equal parts." Then he adds the following: "NOTE.—A plane is an even or level surface, having length and breadth but no thickness." Substituting the same in the definition, we get: "A great circle is one whose even or level surface divides the earth into two equal parts." Remembering that the pupil has just learned that a circle of the earth is an *imaginary line*, and that a line has no breadth or thickness, it may be profitable to speculate upon the probable resulting idea that a thoughtful child would get of the dividing property of the level surface of an imaginary curved line! "A circle, *in Geography*," Colton says, (*Math. Geog. Def.* 5) "is a curved line, every point of which is equally distant from the centre." The insertion of the words in italics just spoils the whole; for it is to geographical circles especially, that the definition *does not* apply. Meridian circles, for example, are not circles according to the definition. The equator also is not a mathematical circle, its longer and shorter diameters being, as has lately been demonstrated, unequal by several miles.

To go over the whole subject and expose every instance of nonsense, or of what is practically no better, sense misplaced, that may be found in our more popular Geographical text-books, in their treatment of this subject, would be an endless task. Enough has already been given to account in part for the unsatisfactory result of the ordinary teaching of Mathematical Geography.

How the subject is mistaught by imperfect and incorrect illustrations, and How it should be taught and illustrated, will be shown hereafter.

THE MONTHLY.—JUNE.

UNWISE LEGISLATION ON CORPORAL PUNISHMENT IN SCHOOLS.

BY the new School Law of New Jersey, it is enacted (Sec. 80): That no teacher shall be permitted to inflict corporal punishment upon any pupil in any school in the State. This, we believe, is the first instance of the entire prohibition of corporal punishments in school by State enactment. It is natural that the opponents of the "birch" should rejoice at such an endorsement of their views, and consider the law a great moral triumph. Possibly it may be. The home training of New Jersey children may be so excellent that punishment can safely be prohibited in the schools; but we doubt it. If we are wrong, and we hope we are, we may shortly begin to look for another law forbidding the imprisonment and other "corporal" punishment of men and women: for if the unreasoning children of New Jersey may be kept in order by moral suasion alone, how much more may those who have arrived at years of discretion. Let the reform go on, and soon offenders against the law may cease to tremble with fear of "getting justice" in New Jersey courts. We spoke of the prohibition of punishment advisedly. The law forbids the infliction of corporal punishment, without limitation. Any infliction of bodily pain as a penalty for wrong doing is therefore prohibited. Is a boy required to stand upon the floor? That is bodily restraint; it is corporal punishment, painful to the poor boy's legs, and if his sensibilities are not entirely blunted, it shocks his nervous system, and makes him hang his head in shame. Let it not be done, it is against the law. Is a boy kept in at recess, or after school? He is deprived of needed recreation; his body suffers, to say nothing of his brain. It is corporal punishment, and must not be allowed. But, it may be urged, the corporal punishment implied, is flogging. Then it should have been so stated: and common prudence might also have provided that on breaking the rod of correction, there should not be suffered in its stead substitutes that are worse. Punishments that task the mind, lacerate the sensibilities, or kill the affections, are infinitely more severe than blows which mark the body: and because they leave no immediate visible marks, are more likely to be carried to excess than the infliction of superficial stripes.

On the score of humanity, we believe the rod to be a more healthful and less dangerous means of enforcing discipline than many of the emotional tortures freely employed by those who would be shocked at the idea of "thrashing" a rebellious youngster. The great majority of school children obey the laws of school, as good citizens the laws of the State, not from fear of punishment, but because of innate self-respect and sense of right. These are seldom or never amenable to punishment. The loss of standing in school, and in the affection of their teachers, that follow upon wrong doing, is sufficient penalty for any misdemeanors that they may be guilty of. But there are others who are not to be reached, certainly not at first, by such influences. They are to be restrained only by fear of punishment. So long as they remain in school, good order and discipline cannot be maintained, except the teacher has power to inflict such punishment. Teachers are human, and power may be injudiciously exercised. But the danger of excessive use of the rod is certainly no greater, if it is as great, as the danger of an ignorant and unfeeling infliction of more severe though less palpable penalties. If teachers are not to be trusted in the one case, no more are they in the other. If they are not to be trusted in either, they are not fit for their office.

Poor Policy.

DURING the earlier years of school life, a child must needs be a receiver of instruction, not a student. After he has acquired a certain amount of mental furniture and discipline, he may make tolerable progress under a hearer of recitation, but at the outset he needs and should have the constant personal attention of a *teacher*, and a teacher of the highest grade.

These are platitudes: but the manifest disregard of them in the management of the public schools of this city, shows that they will bear repeating. Here by the transcendent wisdom of our Board of Education, the grade and remuneration of teachers bear a constant *inverse* ratio to the amount and importance of the work they are required to do. The yearly salaries of the Principals of the Grammar-schools range from one thousand to two thousand dollars. The Principals of the Primary Schools get from six hundred to a thousand dollars. The average daily attendance of the

Primary Schools is nearly or quite double that of the Grammar Schools. Considering the age and character of the children under his care, the Primary Principal should possess the highest executive ability and skill and capacity for teaching. His work is really higher in grade and twice as arduous as that of the Principals of the Grammar Schools. He gets less than half as much pay.

The relative disproportion of the work and pay of the vice-principals of the different departments, is quite as marked. The contrast in the cases of the assistant teachers is still more striking. The female assistants in the Grammar Departments receive from five to eight hundred dollars—little enough in all conscience. Those in the Primary Departments get from two hundred and fifty to five hundred dollars. Full half the children in the Public Schools are in the Primary Departments. Half the pupils of the Primary Departments are the fifth or lowest grade, and taught by the lowest grade of assistants, who receive the lowest grade of salaries. The work done by these half-paid teachers is unreasonable excessive. The By-laws of the Board of Education require an average attendance of fifty pupils to each teacher in the Primary School. How this average may be preserved, and yet the lower grade of assistants most unjustly over-worked, a single example will show. A visitor at one of these schools found, not long since, two teachers of the upper grade, each having under her charge a class numbering less than twenty. In the same building, a teacher of a lower grade was trying to teach a class of one hundred and twenty. The three teachers had under them about one hundred and fifty pupils—an average (!) of fifty, and the law was satisfied. This might have been an extreme case; but the possibility of one such case is a disgrace to the city. It is sad to record that such cases are not exceptional. Assistant Superintendent Calkins, in his last report, gives with commendable frankness statistics which show that both teachers and pupils of the Primary departments are, as a rule, shamefully mistreated. Fifteen per cent. of the Primary classes contain from seventy-five to one hundred pupils each, while *ten per cent.* contain from one hundred to two hundred each—five to ten times as many as the most experienced teacher should attempt to manage. These immense classes, it must be remembered, are composed of children of an age when teaching *en masse* is next to impossible. They require the most unremitting individual attention and instruction of a skillful teacher. Yet they are massed in unwieldly classes, and "almost constantly subjected to the unskilled management of those who possess little or

no knowledge of their work ; * * new apprentices," who "practice upon the little children while trying to learn the art of teaching" (Report, 1866, p. 94). What a blessing the Public School must be to these poor children ! Considering the amount and kind of instruction they receive, it is not surprising that by far the greater proportion of those registered in these classes finish their "education" before reaching the Grammar Schools, which patiently abide, with ample rooms, waiting for the pupils that never come. A private individual who should attempt to conduct business with such constant disregard of the plainest economical principles, would meet with and deserve utter failure. The condition of the majority of the children of this city is sufficient evidence that the laws of business are not reversed in matters of education.

Breakers Ahead!

THAT our public schools not merely provide the means of educating, but educate more or less every child in the land, is in popular estimation beyond a doubt. How slightly the facts sustain such an estimate of the capacity and efficiency of these institutions, is little realized by those who proclaim with such patriotic eloquence, that an education is the birthright of every American child, and that in our favored land popular ignorance is unknown.

One of the crowning glories of the Empire State is the care here exercised in behalf of public instruction. The work done by the schools is unquestionably great, yet less than half of the children of the State, between the ages of six and seventeen, are receiving instruction from them. Possibly half the others are at useful employment. What the remaining thousands are doing may be judged from the occupation of the swarms of children to be seen roaming the streets of our cities and villages. According to official reports, more than half a million of the children of the State are every day out of school.

The Superintendent of the Schools of this city states in his last Report that the whole number of children taught in our Public Schools, during 1866, was over two hundred and twenty-two thousand ; the average attendance was less than ninety-two thousand. One hundred and thirty

thousand nominal pupils were thus constantly absent from school. New Jersey reports nearly two hundred thousand children of school age. Allowing twenty-five per cent. of the number for those attending private schools, there remain one hundred and fifty thousand who ought to be in daily attendance at the public schools. More than one-fourth of this number did not enter a school during the past year; quite many attended only three months; about the same number were in school half the time; while less than a quarter were in attendance the entire school year.

These are no exceptional cases. Wherever we look, except in some portions of New England, the condition of affairs is as bad, and generally worse.

In Wisconsin, according to Superintendent McMynn, half the children registered during the year are daily absent from school; while more than thirty thousand are receiving no instruction whatever. The late census of Philadelphia shows that twenty thousand of the children of that city are neither attending school nor engaged at any useful employment. In Chicago, out of forty-five thousand children of school age, only about twenty-five thousand are enrolled in the public schools. After making the most liberal allowance for pupils attending private schools, there are left thousands whose education must be entirely neglected. With over twenty-five thousand nominal pupils, the city provides seats for but fourteen thousand; yet the schools are not full; the average daily attendance being less than one-third of the entire school population. This would seem bad enough, but it is not all. More than a third of those who are present on any given day are in school less than nine weeks of the year; and of the remaining fraction, only about one-fifth are in attendance the year round.

Is it to be wondered at that with so many neglected children the lists of juvenile criminals should be steadily increasing? These multitudes of children who are growing up in ignorance, are chiefly of foreign parentage; their home training is for the most part anything but virtuous; and yet in a few years they will stand at the polls the political equals of the most intelligent. Our people cannot afford to overlook these facts; and though it is pleasant to contemplate what M. de Laveleye justly calls "the unprecedented results" of our school system, we must not shut our eyes to the fact, that the work done, great though it be, is not half of what should be done.

EDUCATIONAL INTELLIGENCE.

A REVIEW of the condition of the Congressional land grant for the establishment of Agricultural Colleges, shows that of fifteen States enumerated, nine, viz., New Hampshire, Vermont, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Michigan, and Wisconsin, have donated the proceeds of the grant to existing institutions; three others, viz., Massachusetts, Iowa, and Minnesota, have established separate and independent Colleges; and three more, viz., Ohio, Indiana, and Missouri, have taken no final action. Pennsylvania and Michigan had Agricultural Colleges in operation when the grant was made, and the proceeds went to increase their endowments. In Massachusetts the fund was divided, two-thirds going to the Agricultural College, and one-third to the "Institution of Technology," in Boston.

Dr. Barnas Sears, General Agent of the Peabody Educational Fund, has issued a circular giving a statement of the mode in which the Trustees of the Fund propose to apply the charity committed to their charge. He says:

The direct aim of the agent will be to encourage and aid common schools in the South—that is, schools established, supported and superintended by the Southern people themselves. Apart from this leading object, the founding and the maintenance of schools will not come within his plan. Usually, appropriations in moderate amounts will be made where such schools are languishing or are liable to be suspended for the want of the means of support. Similar aid, if necessary, will be given in places unsupplied with schools whenever the citizens shall introduce them and undertake their support. All such aid, however, is to be regarded as temporary. In selecting schools to be aided, or places to be supplied with them, those will be preferred in which the destitution is greatest and the number to be benefited largest. Normal schools, or schools having normal departments, will receive particular attention. A small number of these, furnishing the most perfect models of instruction, will be considered as more important than a larger number of inferior character. Here, also, it is the purpose of the agent to aid others in their work, and not to assume the support of such schools. Appropriations will be made only when the conditions stipulated between the individual or corporation and the General Agent have been strictly complied with. Funds will not be given to literary or professional schools as such. Applicants will make an estimate of the least possible amount necessary to meet their wants, and report the same at once to Mr. Barnas Sears, General Agent, or to Mr. John E. Amos, General Traveling Agent, Atlanta, Ga. Special arrangements may sometimes be made with these, for the purpose of encouraging the industrial arts, or for the education of teachers. The agent will not identify his efforts with those of any other organization, by placing funds at the disposal of its managers, but, in any connection he may hold with benevolent or religious societies, he will pursue his own specific object by such means and appliances as he shall select. At present there will be no agencies, except a few, in which the services rendered will be gratuitous. The agent will not, except in a few special, exceptional cases, have occasion

to employ teachers. He can, therefore, aid such in obtaining places only by giving their names to school committees.—Within three or four years Mr. Peabody has given away, for literary purposes, nearly $5,000,000.

New Hampshire.—In New Hampshire last year, there were 79,375 scholars in the common schools, and 3,850 teachers, of whom 539 were men. The amount appropriated for schools, was $295,019, of which $21,750 was for building and repairs of school-houses. The amount now invested in school-houses is nearly $900,000. New York.—The Masonic Fraternity of this State have been endeavoring for some time to secure funds sufficient for erecting a hall in New York City, and an asylum in the centre of the State. $275,000 have been raised for this purpose. We learn that the Trustees have obtained the property belonging to the People's College at Havana; the Trustees of this institution having agreed to transfer the control of the college to the Masons, provided arrangements were made to meet all just claims against the college, and to open a college and establish an asylum for the care, maintenance and education of the orphans of Masons, and the care of decayed Masons. The benefits of the asylum will, of necessity, be confined to the Masonic fraternity, but the school will be open to all.—New York City.—The Rutgers Institute, having obtained a collegiate charter from the Legislature, will hereafter be known as the Rutgers Female College. Pennsylvania.—The Pennsylvania Training School for Imbeciles now contains 158 patients. During the past year, thirty-four pupils were discharged, twenty-five of them much improved. Ninety-two receive daily instruction; the rest are incapable. The expenses last year were $43,000, which the income was barely sufficient to cover. There are 2,769 pupils in the Soldiers' Orphan Schools. The total number admitted previous to April 1st, was 3,510. 303 applications are on file awaiting vacancies. West Virginia.—A State Normal School has been established at Fairmont. Liberal appropriations have been made by the Legislature for its assistance and encouragement. Ohio.—In Cincinnati the Roman Catholics have twenty-four free schools, with 160 teachers and 12,000 pupils. The schools are in good edifices, and in excellence, rival the public schools of the city. Besides these, the Sisters of Charity and Mercy conduct several large academies and seminaries for the instruction of young ladies. Indiana.—During the last session of the Legislature acts were passed, providing $50,000 for the completion of the Normal School at Terre Haute, appropriating $8,000 annually for the University, permitting towns to levy local taxes for tuition, also to incur debt for the erection of school-houses, and to issue bonds to pay the debt so contracted, and adding $287,059.22 to the School Fund. A State Reform School for Juvenile Offenders is to be established. The Agricultural College bill was indefinitely postponed.—The annual report of public schools in Indianapolis shows the value of school property to be $173,000; the revenue expended in 1866, $55,299.39; number of pupils enrolled, 3,624; average daily attendance, 1,600. Two new buildings, accommodating 500 pupils each, have just been opened. Illinois.—The last General Assembly ordered that "all returned soldiers, who, during the late war, entered the army while in their minority, shall be allowed to attend, free, any public school in the districts where they severally reside, for a time equal to the portion of their minority spent in the military service of the United States." Acts to establish a "Home for the

Children of Deceased Soldiers," and a Reform School, were also passed.—Springfield has six schools, with 1,712 pupils, and an average attendance of 1,593, or 93 per cent. The system in use here might be imitated with profit in other cities. It would be well if New York City required similar punctuality in its teachers and pupils. MICHIGAN.—The Agricultural College has 90 students; 200 applicants were rejected for lack of room. WISCONSIN.—The Report of the Superintendent of Public Instruction shows the number of children, over four and under twenty years of age, to be 352,004, an increase during the year of 12,980. The number attending public school some portion of the year, 234,265, an increase of 11,198. The number in attendance at schools (public and private) was 247,500, or about 70 per cent. of the whole number over four and under twenty. The number under four years of age attending public school, was 2,176; a fact, which the Superintendent justly says, is creditable to neither the judgment of school officers nor the humanity of the parents. The average cost of each scholar is $5.08; average monthly wages of male teachers, $38.63; female teachers, $24.05. The whole amount expended for support of schools was $1,075,572.95. GEORGIA.—The Bureau Superintendent reports an unabated desire for instruction among the colored people; and that when they enjoy the advantages of competent teaching, they make rapid and substantial progress. He estimates that one hundred thousand colored persons in this State are, one way and another, learning to read and write. The number in the schools is over ten thousand. Thirteen schools are sustained by the Bureau. In the eighty-two sustained by Northern Societies, there are 7,792 pupils—almost four-fifths of the number enrolled.—The Bureau Superintendent of Education, at Washington, reports as within his knowledge 1,496 schools, 1,430 teachers, and 95,637 pupils.

GREAT BRITAIN.—The Industrial Schools Bill for Ireland still provokes the most bitter discussion. It provides that all vagrant, refractory and unmanageable children are to be housed, clothed and fed at the public expense, and educated in the strictest sectarian seclusion. It has already passed to its second reading. If made a law, it will strike a severe blow upon united education, and will prove a serious hindrance to the improvement of Ireland.—At a late educational meeting in Mile-End, the Duke of Argyll contrasted the system of education in Scotland with the condition of things in England. He believed the time was near at hand when the people of England will press for the American system; where education is supported by the public rates, leaving the religious education to the Sunday-schools. He did not think a purely secular education on week-days could do any harm, or should be considered antagonistic to religious teaching, but rather helpful to it.

FRANCE.—Official documents show an increase in the number of primary schools and in the number of pupils. The number of adult classes also has increased. Notwithstanding these signs of progress, the condition is still deplorable. In some departments, the percentage of men unable to sign their names is sixty-seven; and in one, ninety-eight per cent. of the women were totally unable to write. 694 parishes are without primary schools. The teachers are wretchedly poor. 24,000 earn only from $120 to $140 per annum. The classical schools are prospering. 8,000 new schools for girls are to be established this year.

CURRENT PUBLICATIONS.

DR. MILLER'S work on the Elements of Chemistry, is divided into three parts, each complete in itself. The first part,[1] on chemical physics, has been reprinted in this country from the third London edition. This edition differs somewhat from the previous ones. The experiments of Regnault on Specific Heat generally, those of Andrews and others on the Heat of Combination, and the results of Electrolysis, have been transferred from the other volumes of the work to this. We note also many additions: Graham's researches on Dialysis and Liquid Transpiration, recent discoveries in the Spectrum, and Tyndall and Regnault's investigations of the Specific Heat of Gases and Vapors. We perceive that in this edition Dr. Miller has adopted the new notation with its new symbols and formulæ. This is certainly a change for the worse. The new system practically does away with the specific names of the oxyds of the alkaline and earthy metals, and thereby, in its nomenclature, is grossly erroneous. Nitrate of sodium does not exist, the nitrate of soda or the oxyd of sodium does exist. Instead of the abolition of these specific names, chemical precision demanded terms of similar character for oxyds of the heavy metals. Nothing but a morbid yearning after novelty could have induced scientific men to accept Gerhardt's system. It is complex and preposterous. It requires us to assume the existence of a new radicle in nearly every compound. Nitrate of silver no longer occurs, but an unknown something of silver, represented by Ag. NO_6, or as it is elegantly written, Ag. NO_3, for the atomic weight of oxygen is no longer 8 but 16. We have no longer any hyponitrites, they are all nitrites of the metal. KO,NO_3 is hyponitrite of potash, but the new formula is KNO_4 or KNO_2, or nitrate of potassium. It certainly means that or nothing at all. The classification of the elements into Monads, Dyads, Triads and Tetrads, has, to say the least of it, only a doubtful foundation in facts. This system is opposed by such chemists as Pelouze and Fremy in France, Brande and Taylor in England, and Draper in America. Dr. Miller hesitates to adopt the mechanical theory of heat as propounded by Tyndall, believing that the chemical objections to it have not been answered. We think he gives too much prominence to investigations of the spectrum, and regard the importance of this subject as immensely over-rated. This work contains many other matters more or less important, upon which we might take issue with the author. Were it not for the value of the work, we might not have noted those already referred to. It is indeed the only elementary treatise on Chemical Physics worthy of the name. The only similar work is that of Daniell, which has been out of print for twenty years, and has become of little utility as a text-book. Dr. Miller's volume contains all recent discoveries, of value to the student, and the author, is as nearly master of his subject as any other living man. A new edition of the whole work is now passing through the press in England, and the remaining volumes will soon be issued by the American publishers.

MR. FROBISHER'S recent work[2] is offered as a "New and Practical System

(1) ELEMENTS OF CHEMISTRY: Theoretical and Practical. By WM. ALLEN MILLER, M.D., LL.D. Part I. Chemical Physics. New York: John Wiley & Son. 8vo. pp. 515.

(2) A NEW AND PRACTICAL SYSTEM OF THE CULTURE OF VOICE AND ACTION, and a Complete Analysis of the Human Passions; with an Appendix of Readings and Recitations. By Prof. J. E. FROBISHER. New York: Iverson, Phinney, Blakeman & Co.

of the Culture of Voice and Action." The newness of the system may be questioned, inasmuch as most of its excellences are to be found in books previously published. Of its practicability, there can be no doubt; in witness whereof we cite the following order, taken at random from the exercises on Gesture:

"*Third Gesture. Crook hands at sides; push boldly out in front; lift hands and arms perpendicularly; let hands fall back; push forward; out to extreme; turn over; down to side.*"

It is true that this merciless gesture, so called, is graciously restricted by Mr. Frobisher to the use of his own pupils; for which the public ought to feel grateful, inasmuch as the pluckiest demagogue might feel dashed at being compelled to turn a physical somerset before an audience, although he might have no objection to exhibit himself as a political mountebank. But obedience to the above directions may be considered easy in comparison with the difficulties the learner must experience in deciphering and obeying the later notations on gesture. Let the following extract from "Satan's Address to His Legions," warn all beginners of the difficulties of the Art of Declamation:

Veq-pha Bveq
"Princes, potentates,
Bzaq Bveq——a vdq vde
Warriors, the flower of heaven! once yours, now lost."
R¹

The letters above and below the lines refer to positions and actions previously mentioned; at least it is believed they do, for we confess we could not penetrate the mystery of some of the references.

As regards the second position of the work, viz: "The Complete Analysis of the Human Passions," we submit that clergymen or doctors would be better able to appreciate and describe its value. It certainly has the merit of conciseness, for it is compressed into nine pages 12mo., or rather into eight, since the first page is devoted to the statement of the passions treated of. We may be excused for referring this subject to the faculty, inasmuch as one of the vocal exercises, on page 61, is recommended by the author as a cure for bronchitis and pulmonary complaints.

Notwithstanding its shortcomings, the book is a desideratum. The rules laid down in it for the cultivation of the voice are copious and useful. The list of difficult combinations of letters is good, and would bear to be considerably extended. The remarks on expression, personation, action and intonation, are worthy of careful perusal; and the selections for recitation in the appendix are many of them novel, and some of them excellent. If Mr. Frobisher has failed in depicting the Art of Elocution with arbitrary signs, it is a failure he shares in common with all who have previously attempted so to delineate it.

The words which Shakespeare uses to describe Cressida, are, with an alteration of the pronoun, a faithful delineation of the finished orator:

"There's language in his eye, his cheek, his lip,
Nay, his foot speaks."

It is questionable whether the higher flights of oratory can be arbitrarily defined. The readings of the part of Coriolanus by John Kemble and the elder Kean were totally different, yet each actor was supported by a large class of the people. The impersonations of historical characters by Rachel

and Ristori had many dissimilarities, yet there were many who admired either, and not a few who applauded both. How could annotations express and reconcile such differences as they exhibited? Practical rather than theoretical instruction in Elocution is what is needed in our schools. One well delivered recitation a week, from a competent speaker, would induce more children to apply their minds to the study of the Art of Declamation, than fifty mumbled reading lessons, or a hundred roarings in chorus.

Dr. Draper's "History of the Intellectual Development of Europe,"[1] is properly the complement of his treatise on human physiology. In the latter, man is treated of as an individual; in the former, he is considered in his social relations. Viewing the subject entirely from a scientific standpoint, Dr. Draper holds that the civilization of Europe has not taken place fortuitously, but in a definite manner, and under the control of natural law; that the procession of nations does not move forward like a dream, without reason or order, but that there is a predetermined, solemn march, in which all must join, ever moving, encountering and enduring an inevitable succession of events: that individual life and its advancement through successive stages, is the model of social life and its secular variations.

The work opens with a discussion of Grecian development, which from its intimate relations to the development of Europe as a whole, demands careful investigation. The life of Greek civilization is aptly divided into five periods, answering to the successive stages of individual life—infancy, childhood, youth, maturity and old age. The age of credulity or infancy, beginning far back in ante-historic time, was marked by the production and ready reception of mythology. It gradually passed into the age of inquiry, which, comprising the risé and decline of physical speculation, began with the Ionian school of philosophy, and ended when the Sophists arose. This was followed by the age of faith, marked by the rise and decline of ethical philosophy. It was opened brilliantly by Socrates, the most exaggerated character of ancient times, and suddenly closed by the advent of Skepticism. The age of reason was signalized by researches in Natural History, shown in the enduring works of Aristotle, and by records respecting the museum at Alexandria. Then came the age of decrepitude, when Neo-Platonism arose, with teachings so antagonistic to the theories of the time, that Justinian closed the schools, and with them extinguished Grecian philosophy.

In his review of the development of European intellect, Dr. Draper traces its history and finds a similar course. With the early Christians began the age of inquiry, marked by bitter ecclesiastical disputes, the overthrow of Paganism, and the rupture of the church. It was succeeded by the age of faith, which, though prematurely ended in the East by the Arabic invasion, continued in the West until the era of discovery, which, in the 16th century, ushered in the age of reason. European criticism arose; the Reformation led to the rejection of authority and tradition: scientific truth was adopted. Like the age of reason in Greece, that in Europe is characterized by earnest investigations of natural phenomena, resulting in inventions of great practical utility, and in grand discoveries

(1) History of the Intellectual Development of Europe. By John W. Draper, M.D., LL.D. Fourth Edition. New York: Harper & Bros. 8vo. pp. 631. $5.00.

in exact science. Europe is now to enter upon its mature phase of life. Each of its nations will now attempt its own intellectual organization. To be permanent, the basis upon which that organization must rest, is universal, and, if necessary, compulsory education. Beyond this, but one thing remains—to secure intellectual freedom as completely as the rights of property and personal liberty have already been secured. To such an organization of national intellect, the countries of Europe are rapidly advancing. "In an all-important particular, the prospect of Europe is bright. China, is passing through the last stage of civil life in the cheerlessness of Buddhism; Europe approaches it through Christianity. Universal benevolence cannot fail to yield a better fruit than unsocial pride. There is a fairer hope for nations, animated by a sincere religious sentiment, who, whatever their political history may have been, have always agreed in this, that they were devout, than for a people who dedicate themselves to a selfish pursuit of material advantages, who have lost all belief in a future, and are living without any God."

For comprehensive grasp, for clearness of statement, and for exactness of arrangement, this work is excelled by few. In a small space we have the result of a life's labor. To defend a few propositions, stated in a dozen lines, the author has ransacked every accredited science, all recent discoveries, and every source of historical information. Though treating the subject exclusively from a scientific point of view, in many chapters discussing abstract science, the style is so simple, the language so well chosen, that the lay reader finds no difficulty in following the argument. This volume is one of the ablest contributions of the century to the philosophy of history.

Mr. Dixon's "New America"[4] deals chiefly with the excrescences of our moral and political systems. The Mormons, Shakers, and other anomalous communities; the brusqueness of our manners, the peculiar characteristics of our women, the unfinished condition of all things,—these are the bases of his book. Mr. Dixon avoids the supercilious style so common among English tourists. He has found in America a great nation; its excrescences, though sufficient to shake any other commonwealth in Christendom, are, by its people, regarded as trifling matters, which will eventually work out their own cure. It is a noticeable fact, that since Mr. Dixon's return to England, the criticisms of American works in the *Athenæum* have lost the flippant and frivolous style formerly characterising them.

Our author is enraptured with the beauty and thrift of the Mormon settlements: he admires the indomitable energy which formed a colony in the Valley of Salt; he praises the industry which has converted the desert into a garden, and the honor which has enabled the colonists to live in peace amid savages with whom others are always at war. Burton was not more delighted with Mormonism than is Dixon. True, there are few defects in the system, such as polygamy, the absolute supremacy of Brigham Young, and the abject condition of the women; but these are difficult questions: Mr. Dixon hesitates to discuss them harshly.

He found much pleasure during his visit to the Oneida Community. This singular people are the only existing example of conscientious free-love. "They have restored, they say, the Divine government of the

(4) New America. By Wm. Hepworth Dixon. Philadelphia. J. B. Lippincott & Co. Crown, 8vo. pp. 495. $2.75.

world; they have put the two sexes on an equal footing: they have declared marriage a fraud and property a theft: they have abolished for themselves all human laws: they have formally renounced their allegiance to the United States." Financially and socially, the community is successful. No lawyers exist, for there are no strifes: no physicians are needed, for there are no sick: idlers are unknown, for work is honorable, and each has his department of labor.

We are sorry for Mr. Dixon that he had the misfortune to fall into the hands of Colorado wags, who gorged him with tales of the most preposterous character, all of which he swallowed with the grace ascribed to the proverbial cockney traveler. To his recollection, Denver City must be a place of horrors, where vigilance committees, lynch law and promiscuous shootings hold high revelry: where human life is less valuable than horse-flesh, for the murderer escapes, while the horse-thief is hung. In his eyes, Missouri is little better, and parts of Kansas are quite as bad.

The chief value of this work lies in its descriptions of the peculiar communities existing among us. It contains information not to be found elsewhere; and notwithstanding the author's credulity, his statements, in the main, may be regarded as correct. The book is well printed, and is illustrated by six engravings, said to be from original photographs.

Upon returning from Dr. Kane's expedition in 1854, Dr. Hayes[5] proposed to complete the survey of the north coasts of Greenland and Grinnell Land, and if possible, to make farther explorations in the direction of the North Pole. The first public announcement of the project was made in December, 1857. It was warmly seconded by the scientific societies, and subscription lists were at once opened in different cities. Intense interest in the undertaking was excited both here and in Europe, and subscriptions came in freely. Dr. Hayes proposed to fit out two vessels, one a steamer of small power and the other a sailing vessel, the other to be employed as a tender or store-ship; but, notwithstanding the efforts made in all quarters, June, 1860, found the treasury without sufficient means to equip two vessels. To defer the departure no longer was essential, and it was decided to fit out only one small sailing vessel. A schooner, the *United States*, one hundred and thirty-three tons burden, was purchased, and strengthened for Arctic navigation. By July 6th, the preparations were completed, and the vessel, with a crew, in all fifteen persons, sailed from Boston harbor. On the fourth of August they entered Proven, Greenland. Here and at Uppernavik, Dr. Hayes was kindly received and cheerfully assisted by the Danish officials. The season was favorable, and with little difficulty the schooner reached Port Foulke, lat. 78° 17′, before October first. At this point, winter quarters were arranged, and when, on the fifteenth, the sun sank below the horizon for the long night, the men were comfortably housed and thoroughly contented. During the three months following much work was done by moonlight: the latitude and longitude of numerous localities were determined: exploring excursions were made; and some interesting studies were carried on respecting the peculiarities of glaciers. All went on merrily until the beginning of December, when a series of disasters began. An epidemic broke out among the dogs; food failed; to crown all, Sonntag,

(5) The Open Polar Sea: a Narrative of a Voyage of Discovery Towards the North Pole. By Dr. J. J. Hayes. New York: Hurd & Houghton. 8vo. pp. 454. $3.75.

the astronomer, and ablest man of the party, perished in an attempt to cross the ice to gain relief from the Esquimaux at Whale's Sound, one hundred and fifty miles south.

At length, in the latter part of January, the dreary night passed away. It was soon apparent that farther progress northward with the schooner was, for the time, impossible, and that all future exploration must be performed by means of dogs. After a preliminary journey of three hundred miles, Dr. Hayes started northward on April 4th, with every available man of the crew. Incessant snow storms followed for several days. On the 28th, so many of the men were worn out, that all but four, including the commander, were compelled to return. With his little band the Doctor pushed forward, and at length, after enduring almost incredible obstacles, on May 18th they reached the open polar sea, and stood upon its shores in latitude 81° 35′ N., longitude 70° 30′ W., about five hundred miles from the North Pole. After depositing the national ensigns and other mementoes in cairn, he reluctantly quitted the place, and returning, reached the vessel on June 3d, after a wearisome journey of sixteen hundred miles on the ice. Inspection of the vessel showed it unfit to undergo any more encounters with the ice, and Dr. Hayes was compelled to give up all hope of proceeding farther with the means at his disposal. On his return, he reached Boston in October, 1861, and offered his services to the government for the war. His engagements during the rebellion prevented the issue of the book: hence its appearance at this late day.

In this journey, Dr. Hayes met with many stirring adventures, which he has turned to good account in his work. His contributions to geography are not great, as he passed but little to the north of his predecessors, and most of the ground has been well-trodden before. His story is well told, and is well worth reading.

James K. Paulding, the intimate friend of Washington Irving, was a prominent pioneer in American literature. Owing to peculiar circumstances in the later portion of his life, and to his devotion to political matters, many of his writings have been forgotten, and his merit has not been acknowledged by our generation. His literary life,[6] compiled by his son, is a selection of his more important fugitive pieces, with extracts from his larger works, interspersed with brief biographical notices. The editor has judiciously given little of private events, and has preserved us from the deluge of tedious correspondence, so often found in similar books. Mr. Paulding's character is well shown in the selected extracts. He was not an author: he wrote fluently, on the spur of the moment, and never revised his compositions: his power lay in controversy, not in description; his power of hate is exemplified in his satirical efforts: he seemed to revel in inflicting pain upon his adversaries: there is no alleviating sentence, no polish to soothe the irritation: his satire is unmingled gall: it made his opponents writhe. Most of his writings were political, on subjects suggested by the questions of the time. These are no longer of interest. There were others which showed the author's power in higher departments of literature. These are of value still. It is proposed to issue them hereafter. We perceive that the publishers of this work are guilty of a petty deception, which we had hoped would have been left entirely to our

(6) Literary Life of James K. Paulding. By his Son, Wm. J. Paulding. New York: C. Scribner & Co. 12mo. pp. 397. $2.50.

British cousins. The volume is announced as a crown octavo, whereas it is only an ordinary duodecimo. This is a piece of trickery altogether too insignificant for any respectable publishers to be guilty of.

CONSIDERABLE experience as a teacher of Reading and Elocution, has proved to us the necessity of employing a little less *theory* and vastly more *practice* in our endeavors to teach this difficult branch, and to this end a compilation is offered * * * especially adapted to practical elocution. So writes in his preface, the compiler of "One Hundred Choice Selections."[7] The good sense thus manifested, predisposes a favorable estimate of the writer's ability to make a selection adapted to secure the end in view. Such an estimate is well sustained by the pieces chosen. Most, though not all, of them are good. A sufficient number of the more popular verses, called out by the late war, are given, to ensure the popularity of the collection. It would have been better had more space been devoted to pieces not found in other books of the kind. The publishers' part is not so well done. The low price at which the book is offered is the only excuse that can be given for the little skill and taste displayed in its execution.

THE lectures[8] upon Natural Theology, delivered by Prof. Chadbourne, before the Lowell Institute of Boston, have been published for use in schools. They are of wide range, and full of valuable information. The book is a good one for the library, but is not fitted for use as a text-book. The reasoning is not as close or as accurate as that of Paley, whose work it is intended to supplant.

THOSE interested in the education of deaf mutes,[9] will find an interesting and instructive discussion of the methods employed in teaching these unfortunates, in a recent pamphlet, by Gardner Green Hubbard, of Cambridge, Mass. The author argues in favor of Articulation, as taught in England and Germany, and against the use of pantomimic signs, as employed in this country, in imitation of the French. It must be admitted that he makes a strong case of it. He gives, in the course of his argument, much curious information.

UNDER the eccentric title, "Backbone,"[10] the author and editor of the *Scalpel* has republished from that periodical as entertaining a jumble of sense, nonsense, sarcasm and extravagance, as we have ever seen. With a hearty hatred of shams, the Doctor slashes right and left among the humbugs of his profession, and in society, with zealous good will. His style is recklessly vigorous—trenchant and clear enough when he knows what he wants to say or has a hard hit to make; but sometimes runs into the opposite extreme, and is as muddy as in the following, taken from his prefatory note: "It is quite possible the editor has been writing as Leigh Hunt said to some friends who asked him how he got home in one of those miserable, foggy nights, so common in London—he went home by mud-

(7) ONE HUNDRED CHOICE SELECTIONS in Poetry and Prose, both new and old. By NATHANIEL K. RICHARDSON. Philadelphia: P. Garrett & Co. 12mo. cloth, pp. 180. 75c.

(8) LECTURES ON NATURAL THEOLOGY. By P. A. CHADBOURNE, M.D. New York: G. P. Putnam & Son. 12mo. pp. 320. $1.75.

(9) THE EDUCATION OF DEAF MUTES: shall it be by Signs or Articulation? By GARDNER GREEN HUBBARD. Boston: A. Williams & Co., pp. 36. Price 25c.

(10) BACKBONE. By EDWARD H. DIXON, M.D. New York: R. M. DeWitt.

light." Exactly: only we are inclined to believe that it is not merely quite possible, but quite certain. A good deal of the book is trash; yet there is a sturdy love of honest humanity manifested throughout, that atones in great measure for its many defects and extravagances.

THE teacher's calling necessitates his being a comparative stranger to the more active interests of men; and unless he takes pains to counteract the influence of his books and business, he is in danger of becoming absorbed in the dead past to the neglect of the living present. He may be well enough acquainted with the doings and sayings of ancient heroes, but know little or nothing of Bismarck and Napoleon. Most men now-a-days are more interested in the latter: and if the school-master is unable to explain to their satisfaction the causes which led to a consolidated Germany, or why little Luxemburg is just now a bone of contention, the good patrons of his school are more than likely to entertain grave suspicions of the extent and value of his information. The time that teachers generally can devote to the news of the day is indeed small, but not so small as to make it impossible for them to keep themselves well posted, provided they seek for information in the right quarter. One may reasonably be loth to sacrifice the time and patience required in wading through the long columns of diluted matter in the daily papers; but when a thorough digest of the world's doings, scientific and literary as well as political, may be obtained in a few minutes from a dozen attractive pages, the process of "posting" becomes a positive pleasure, as every reader of the *Nation* can testify. The weekly bill of fare which this paper sets before its readers, is about as follows:

THE WEEK—Brief comments on current events at home and abroad; LITERARY, SCIENTIFIC, and EDUCATIONAL NOTES; BOOK REVIEWS—By the most accomplished writers; EDITORIAL ARTICLES; ARTICLES ON SOCIAL TOPICS; ART CRITICISMS—Music, Pictures, the Drama; CORRESPONDENCE—Special and occasional; BOOKS OF THE DAY—A list of the latest publications, with price annexed.

The comments upon the principal events of the day are always dignified and thoroughly independent. In politics, *The Nation* is wisely radical, supporting the broadest republican principles, yet exposing frankly and fearlessly the faults and errors of all parties. Its book reviews are not excelled in critical ability and candor by any paper in the country. This department alone is sufficient to make *The Nation* an educational journal of the highest order. Its list of contributors includes many of our ablest scholars and writers; and it may safely be said that there is no paper more worthy the support of teachers, and none from which teachers may receive greater benefit. *The Nation* is published by Messrs. E. L. Godkin & Co., New York. Price per annum $5, in advance. To every new subscriber to the MONTHLY, and to every one renewing his subscription, *The Nation* will be added on the gross payment of $5.50.

THE second number of *The Naturalist* (April) contains articles on Moss Animals or Fresh Water Polyzoa; Fertilization of Flowering Plants; Insects and their Allies; The American Silk Worm (continued); The Land Snails of New England (continued); Reviews; Nat. Hist. Miscellany; Correspondence; Nat. Hist. Calendar for the month, and other interesting matter.

SCIENCE AND THE ARTS.

SIR CHARLES LYELL gives, in the new edition of his Principles of Geology, the results of Mr. Stone's calculation of the variations which have taken place in the figure and position of the earth's orbit during one million of years. These results are deserving (says the *London Review*) of attentive consideration, and show the inaccuracy of the statement so often made in popular works on Astronomy, that the eccentricity of the orbit varies between definite limits, with a definite period of oscillation, the position of the perehelion travelling meanwhile continually in one direction. On the contrary, the successive maxima of eccentricity differ considerably *inter se*, and so of the successive minima: the period of oscillation is variable; and the perihelion not only travels with variable velocity, but sometimes retrogrades for twenty or thirty thousand years together. We must pass over many maxima before we arrive at one approaching Le Verrier's estimate of the absolute maximum (,0777). In the whole range of years tabulated by Mr. Stone, the greatest eccentricity is ,0747; this was the case 850,000 years ago, and the earth's orbit was then nearly as eccentric as the orbit of Mars now is. The least eccentricity (within the period tabulated) occurred 900,000 years ago: at this time the eccentricity was ,0102. The present eccentricity is ,0168.

—*The Evening Post* states that at the last meeting of the Lyceum of Natural History, N. Y., a paper was read by Dr. Feuchtwanger, on the production of soda-ash in the United States. The process pursued at the soda works near Pittsburg is essentially the same as in England. The chloride of sodium, or common salt, is treated with an equal weight of sulphuric acid, and the resulting sulphate of soda is reduced by means of charcoal and lime. The company also manufacture a large quantity of caustic soda from the mineral cryolite, which is obtained from Greenland. The deposit of cryolite is very large, being in a vein half a mile wide. One hundred thousand tons of it are in sight. As the cryolite contains forty-four per cent. of hydrated soda, the yield from this source will be very large. The mineral cryolite is interesting on account of the numerous ores which accompany it. Imbedded in it are found copper pyrites, iron pyrites, spathic iron, zinc blende, galena, columbite, and a few rare minerals. It would be valuable to chemists as a source of fluorine; also for the preparation of fluorides.—Professor Seely stated that works have been erected in this city for the production of tons of sodium, a metal which a few years since was sold by the grain. Instead of taking the wrought iron mercury bottle formerly employed for the production of sodium, they now employ retorts made of boiler iron, four feet in length and five inches in diameter. The actual cost of sodium in this country need not exceed four dollars a pound. As it is lighter than water, a pound will go a long way. In England the theoretical cost is put down at seventy-five cents a pound. Sodium is now extensively employed in the amalgamation of gold, according to the Wurtz process, also in the manufacture of magnesium and aluminum. Its cheap production will open the way to its introduction in many important industries.

—Dr. Ferdinand Mayer made some remarks upon the new mineral, bauxite, which has recently been found in France. It may be regarded as a hydrated oxide of alumina, in which iron has been replaced by the alumina. No deposit has been found in this country. The proper place to look for it would be in beds of clay iron ore and yellow iron stone. It is remarkable for the entire absence of silica, so-that it does not resemble kaolin or potter's clay. It appears to bear about the same relation to kaolin that the hydrated oxide of magnesia (brucite) does to serpentine, if we omit all mention of the iron and other impurities. Bauxite has numerous applications in the arts. It is employed in the manufacture of aluminum. This oxide of alumina behaves like an acid, and will expel many acids at a white heat, without itself being decomposed. It forms a soluble compound with barytes, by which the alumina can be separated from iron. By fusing bauxite with soda ash the aluminate of soda is produced, an article of commerce which finds extensive application in calico printing, and which could be employed in making glass and ultra marine. It is proposed to fuse bauxite with common salt, as one step in a new process for the preparation of soda ash. Chile saltpeter, or nitrate of soda, is decomposed by bauxite, nitric acid being expelled and aluminate of soda resulting from the fusion. Doubtless by fusing common salt, nitrate of soda and bauxite, soda, aluminate of soda, chlorine gas and nitric acid would be produced, and if the aluminate of soda were to be decomposed by carbonic acid, the alumina could be employed a second time. The extensive manufactures in Newcastle now prepare sixty tons of sulphate of alumina every month from bauxite. They also manufacture aluminate of soda, lime and baryta and sulphate of alumina. The latter salt is extensively employed in the manufacture of beet sugar. Bauxite will find application as a substitute for alum, and it can be employed for the decomposition of chloride of potassium in working up kelp and the residues from salt works. It is also proposed to use it for the decomposition of barytes. Very few minerals of recent discovery have attracted so much attention, and it is to be hoped that deposits of it will be discovered in the United States.—Mr. Hays exhibited specimens of native gold in quartz from South America. One piece, which was broken from a mass originally weighing seventy-five pounds, yielded more than a hundred thousand dollars to the ton.

—The *Scientific American* states that Oreide, the beautiful alloy resembling gold, manufactured in Waterbury, Conn., is a French discovery, and consists of pure copper 100 parts; zinc, or (preferably) tin, 17 parts; magnesia, 6 parts; sal ammoniac 3.6 parts; quicklime, 1.8 parts; tartar of commerce, 9 parts. The copper is first melted, then the magnesia, sal ammoniac, lime, and tartar in powder, are added little by little, briskly stirring for about half an hour, so as to mix thoroughly; after which zinc is thrown on the surface in small grains, stirring it until entirely fused; the crucible is then covered, and the fusion maintained for about thirty-five minutes, when the dross is skimmed off, and the alloy ready for use. It can be cast, rolled, drawn, stamped, chased, beaten into a powder or leaves, and none but excellent judges can distinguish it from gold. Another beautiful alloy, rivaling the color of gold, is obtained with 90 per cent. copper, and 10 per cent. aluminium, which must be perfectly pure, of the best quality, and in exact proportion. It is little affected by the atmosphere, and is strong, malleable, and homogeneous in structure.

—At the annual meeting of the Sweedish Academy of Science, M. Nordenskiold announced that a discovery of great importance to geological science had been made in the hill of Nullaberg, in Sweden. A large deposit of bituminous gneiss, thirty-three metres in thickness, has been found imbedded in layers of gneiss and mica schist. It is composed, in addition to quartz felspar and mica, of a black substance like coal, containing carbonated hydrogen—in fact, a real organic substance, formed of the remains of plants or animals coeval with the deposit. He added that there could be no doubt of the antiquity and geological situation of the strata of Nullaberg ; infiltration was impossible. The inference was that the crystaline stratified rocks of Scandinavia were formed when there existed animated creatures, but at a time long anterior to the period when life is supposed to have first existed on the earth.

—Mr. J. Geikie, author of a recent valuable paper "on the Metamorphic Lower Silurian Rocks of Carrick, Ayrshire," maintains that the felspathic, dioritic, serpentinous, and calcarious rocks of that district are not igneous but metamorphic. In his opinion, the facts prove—1. That the strata owe their metamorphism to hydro-thermal action. 2. That the varying mineralogical character of the rocks is due principally to original differences of chemical composition, and not to infiltration of foreign matter at the time of metamorphism. 3. That the highly alkaline portions of the strata have been most susceptible of change. 4. That in beds having the same composition, but exhibiting various degrees of alteration, the intensity of the metamorphism has been in direct proportion to the amount of water passing through the strata. 5. That in some places the rocks have been reduced to a softened or pasty condition.

—Seeds of the Peruvian cocoa plant, of the properties of which a short account was given in a late number of the MONTHLY, were recently presented to the Royal Botanic Society of London. This interesting plant is quite distinct from the cocoa tree, from the seeds of which chocolate is made. Although the properties of the cocoa leaf appear to be much exaggerated, there is no doubt that those who use it bear fatigue and abstinence for a considerable length of time without the feeling of hunger or weakness. The plant is extensively cultivated in South America, the amount consumed annually being about thirty millions of pounds. The society intend to have experiments made with this plant, both in its cultivation and with regard to its physiological effects.

—A strong solution of sulphate of magnesia (epsom salts) mixed with white-wash, will produce a beautiful white for walls and ceilings. A small quantity added to starch considerably increases its stiffening property, and at the same time renders the articles starched to a certain degree fire-proof.

—A superior glue may be made by dissolving three parts of india rubber in thirty-four parts of naptha. Heat and agitation are required to effect a prompt solution. When the rubber is completely dissolved, add sixty-four parts of finely powdered shellac, which must also be heated in the mixture until all is dissolved. This mixture may be obtained in sheets like glue by pouring it while hot upon plates of metal. When required for use it may be softened by beating.

—At the time of the earthquake in Missouri and Kansas, April 24th, an acre of ground three miles south of Carthage, on the Miami canal, sunk ten feet, showing that the shock extended to Ohio. The ground, which was of a very solid character, and bore several large trees, sunk bodily, leaving a perpendicular wall of ten feet or more on all sides.

—The celebrated Dragon-tree of Oratavo, in the Canary Islands, which has been known and used as a landmark for centuries by seamen of all nations, exists no longer. A late hurricane which caused considerable damage in those islands, uprooted it. The tree had a very peculiar shape, and its age was estimated at over 1,000 years.

INVENTIONS FOR SCHOOLS.

OUR list of new inventions for this month, comprises two very useful contrivances, *a Crayon Holder*,* and a *Spelling Stick*.*

The Crayon Holder

Is difficult to describe clearly, though it is extremely simple in construction. Its chief merits consist, (*a*) in its long grip adapted to the usual taper of crayons, so that however tightly the crayon is held, there is no danger of the holder biting off the protruding portion while in use; —this is a point of great importance, and never before attained; and (*b*) in its length, or rather its shortness, for it is only as long as a crayon, with the addition of a small knob bearing a tapering screw which governs the grip upon the crayon. The convenience of a holder that will take in an entire pencil, and yet be short enough to be held easily and naturally in the hollow of the hand, as a simple crayon is, will be appreciated by all.—The Holder is made of box or other wood, and is light and pleasant to handle.

The Spelling Stick

Made at the suggestion of an experienced teacher, is intended for the lowest grade of classes in primary schools. It consists simply of a T shaped holder, the cross-bar grooved for the insertion of letter-cards. Its use requires no explanation. Accompanying the "stick" is a 5-*a* font of upper and lower case letters and figures of large size. Also sets of word-cards, in smaller type, comprising most of the common words of three letters and less. It is intended to add sets of longer words from time to time, as they are required. These simple cards afford material for an extended and excellent course of word-building, and in the construction of sentences. Long before the child is able to write, he may thus be made perfectly familiar with the appearance and spelling of common words, and the expression of simple thoughts in sentences. The letters and word-cards may be used without the stick: and will afford both instruction and amusement to children at home, as well as at school.

*Manufactured by J. W. Schermerhorn & Co., N. Y. Price, Crayon Holders, 25c.; Spelling Sticks, 15c.; Font of Letters and Figures, 25c.; Larger Letters, *heavy* card-board, 50c.; Word Cards per set, 50c.

WHAT IS A SEWING MACHINE?

It is a machine for making clothing and doing sewing of all kinds.

Does it make the same kind of stitch that a lady makes with her needle?

No; it makes other kinds.

What are they called?

"Lock Stitch," "Chain Stitch," and "Double Chain Stitch."

What is the difference?

Here is a picture of the Lock Stitch, as the thread looks when stitched into the cloth, only this is made larger and coarser that you may see it better:

No. 1.—Lock Stitch.

It is made with two threads, one on each side of the cloth, and "locked" together in the centre. Hence it is called the "Lock Stitch." It cannot be pulled out nor ravelled, and there is only a single line of thread on each side of the seam.

Is the seam strong and firm?

Yes; just as firm as the cloth when properly made. It is the principal stitch made by sewing machines since their first invention.

How much thread does it take for a yard of seam?

About two yards and one-half.

What is the principal Machine that makes the Lock Stitch?

THE WHEELER & WILSON MACHINE.

What is the "Chain Stitch?

Here is a picture of it:

No. 2.—Chain Stitch.

It is such a stitch as the ladies make in knitting and crocheting, and it can be ravelled in the same way.

Is it much used in sewing?

No; because the seams made with it pull out so easily. Think of garments coming apart when one is in the street.

How much thread does it take for a yard of seam?

About four and a half yards; or nearly twice as much as the "Lock-Stitch."

What is the principal machine making this stitch?

The Wilcox & Gibbs.

What is the "Double Chain Stitch?"

It is very much like the Single Chain Stitch, but is made with two threads.

Here is a picture of it:

No. 3.—Double Chain Stitch.

Can it be ravelled?

Yes; and shows a ridge on one side.

What makes the ridge on the under side of the seam?

It is the looping and knotting of the two threads used.

Does that do any harm?

Yes; it wears off when garments are washed and ironed. It does not look well unless used as embroidery. No one would like a handkerchief hemmed with it, or any seam made that shows. A handsome stitch, you know, only shows a single line of thread.

How much thread does it take for a yard of seam?

About six and one-half (6½) yards. The most of any machine.

What machine makes this stitch?

The Grover & Baker.

Who use Sewing Machines?

The Wheeler & Wilson are used by Seamstresses, Dressmakers, Tailors, Manufacturers of Shirts, Collars, Skirts, Cloaks, Mantillas, Clothing, Hats, Caps, Corsets, Ladies' Boots and Shoes, Linen Goods, Umbrellas, Parasols, etc. They work equally well upon silk, linen, woolen and cotton goods, with silk, cotton, or linen thread. They will seam, quilt, gather, hem, fell, cord, braid, bind, and perform every species of sewing, making a beautiful and perfect stitch, alike on both sides of the article sewed.

How many Wheeler & Wilson machines have been sold?

Nearly 300,000.

The WHEELER & WILSON COMPANY has prepared tables showing, by actual experiments of four different workers, the time required to stitch each part of a garment by hand and with the Wheeler & Wilson Sewing Machine. Subjoined is a summary of several of the tables:

	BY MACHINE.		BY HAND.	
	Hours.	*Minutes.*	*Hours.*	*Minutes.*
Gentlemen's Shirts	1	16	14	26
Frock Coats	2	38	16	35
Satin Vests	1	14	7	19
Linen Vests	0	48	5	14
Cloth Pants	0	51	5	10
Summer Pants	0	28	2	50
Silk Dress	1	13	8	27
Merino Dress	1	4	8	27
Calico Dress	0	57	6	37
Chemise	1	1	10	31
Moreen Skirt	0	35	7	28
Muslin Skirt	0	30	7	1
Drawers	0	28	4	6
Night Dress	1	7	10	2
Silk Apron	0	15	4	16
Plain Apron	0	9	1	26

NUMBER OF STITCHES MADE PER MINUTE.

	By Hand.	*With Machine.*	*Ratio.*
Stitching fine Linen	23	640	28
Stitching Satin	24	520	22
Stitching Silk	36	550	18
Seaming fine Cloth	18	594	15
Patent Leather, fine Stitching	7	175	25
Fitting Ladies' Gaiters	28	510	18
Stitching Shoe Vamps	10	210	21
Binding Hats	33	374	11

When the machines are driven by power, the ratio is much higher—1,500 and 2,000 stitches per minute not being an unusual average.

Think how much time is saved by using the machines.

MATHEMATICAL PROBLEMS.

The proportion of thread used in making the various stitches is as follows:

"Lock Stitch," 1; "Chain Stitch," 1 8-10ths; "Double Chain Stitch," 2 5-10ths.

Prob. 1. If a "Lock Stitch" machine uses 10 cents worth of thread and silk in a day, how much would it use in a year of 300 working days? Answer, $30.

Prob. 2. How much would a "Chain Stitch" machine use in doing the same amount of sewing? Ans. $54 worth.

Prob. 3. How much would a "Double Chain Stitch" machine use in doing the same amount of sewing? Ans. $75 worth.

Prob. 4. There will be ultimately at least a million of sewing machines used in the country; at the above rate, what value of thread and silk would be used annually if all of one kind were used? Ans. "Lock Stitch," $30,000,000; "Chain Stitch," $54,000,000; "Double Chain Stitch," $75,000,000.

Prob. 5. What value of thread would be wasted by the "Chain Stitch?" Ans. $24,000,000.

Prob. 6. What value would be wasted by the "Double Chain Stitch?" Ans. $45,000,000.

Is it wicked to waste things? Yes.

Then what sewing machine should be used?

Ans. "WHEELER & WILSON'S LOCK STITCH SEWING MACHINE."

ARTICLES FOR EVERY SCHOOL.

AIDS TO SCHOOL DISCIPLINE, 500 Certificates, Checks, Cards, &c., $1.25
(They save time of Record-Keeping, and reduce "Rewards" to useful and perfect System.

BLACK BOARDS, *with perfect slate surface,* neatly framed:

No. 1—size 2 ft.x3ft....$3.50. No. 2—2½ ft.x3½..... 5 25
3— " 3 ft.x4ft.... 7.00. 4—3½ ft.x4½..... 9.50
5— " 4 ft.x5ft....12.00. Any size to order per sq. ft..... 60
Same sizes in black walnut frames, each board, extra..... 1.00

Spherical, for Mathematical Geography, Spherical Trigonometry, etc.:

No. 1—On handle, very convenient, size 4in. diameter..... 1.50
2—Globe Mountings, brass meridian, wood frame, 6in. dia..... 5.00
3— " " " 9in. dia..... 9.00
4— " " bronzed frame, 12in. dia..... 15.00
5— " " " 15in. dia..... 20.00
6— " high bronzed frame, with casters, 18in. dia.... 30.00

BLACK-BOARD RUBBERS, No. 0—Sheep-skin, *small* size, per doz.. 2.00
No. 1—Sheep-skin, regular size,.....per doz. 3.00
2— " longer wool and better finish,..... " 4.00
3—Lamb-skin, very fine long bleached wool, extra finish,.. " 5 00
5—CHAMOIS SKIN, patented,..... " 6.00

BLACK-BOARD SUPPORT, Hammond's, complete & substantial, each 6.00

BOOK-CARRIERS, Manchester's, for Boys and Girls, very popular, each.. 50

COMPOSITION PAPER, "An Educational Novelty," 3 Nos., per quire, 50

CRAYONS—"Eureka," dustless & economical, (somewhat like Talc), per 100, 50
Chalk, from Waltham.....per gross, 40
Colored..... " 1.25

CRAYON HOLDER—Just invented and patented, each..... 25

DESKS—NEW AMERICAN SCHOOL DESK AND SETTEE, "on Physiological Principles." (See Illustrated Circular.)

GYMNASTIC APPARATUS—Dumb Bells, Rings, Clubs, Wands, etc.

GLOBES—Franklin, sizes 6 in. to 30 in. diameter, prices.....$5 to 275.00
MAGNETIC, Perce's, 5 in. to 12 in. diameter, prices.....$6 to 25.00

INK-WELLS—Britannia, lined with glass.....per dozen, 3.00
Sherwood's, iron, lined with glass, patent locking cover,..... " 3.50
Heavy glass sockets..... " 1.00
Jet sockets, semi-metallic, very durable..... " 1.00
Japanned iron covers, for both kinds of sockets..... " 1.00

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NUMERAL FRAMES, superior style, 100 balls..... 1.25
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SLATING, "EUREKA LIQUID," (Munger's,) for making an enduring SLATE SURFACE on old or new boards and wall,.....per quart 3.00
(One quart makes 50 sq. ft. or more of perfect Slate Surface, unrivalled in excellence.)

SLATED LEAVES, convenient and economical, per 100..... 3.00

SLATE RUBBERS, to erase without water,.....No. 1, per 100 $3, No. 2, 5.00

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AIDS TO SCHOOL DISCIPLINE,

(BEAUTIFULLY ILLUMINATED.)

THE beneficial effect of an accurate register of deportment and scholarship in promoting a healthy spirit of emulation and scholarly pride, is acknowledged by all. Yet such a register is rarely kept except in the higher class of Schools. In most Schools, Teachers have not time to record each recitation as it occurs. Other duties crowd upon them so that the record is neglected for the time, and afterwards made up from memory. Perfect accuracy being impossible in such cases, *confidence in the record is weakened, and its moral force, in a great degree, lost.*

Sometimes accuracy is insured by taking sufficient time for the record from that assigned to each exercise. But there are often twenty or more daily exercises to be recorded, and if only two or three minutes are taken for each, there will be required for all not less than an hour—*one sixth part of the School day.* This time cannot be spared from other duties. And the loss of time is not confined to the day. Once a month, or oftener, many hours must be spent adding up and averaging accounts and making out reports to parents.

The AIDS are designed to secure the good results of records and reports with less expense of time and labor. This they accomplish most happily, while at the same time other advantages are gained—not the least of which is an active parental interest naturally awakened by a system of daily reports.

And a further benefit is secured by their use. Many children cannot appreciate the significance of a simple mark or figure. They require something that they can take home and show to their parents and friends as evidence of good conduct, and which, if they fail to obtain by negligence or misconduct, will cause their immediate exposure. This the AIDS afford. The system is consequently more efficient than ordinary records, besides being more popular with parents and pupils as well as with teachers.

The AIDS may be used in various ways. The following has been found convenient: In the morning each pupil receives a CARD, (five merits, representing a *perfect day,*) to be forfeited in case of misdemeanor or failure in recitation. SINGLE MERITS and HALF MERITS are provided for those pupils who fail to retain their CARDS and yet are deemed worthy of some credit. When five Cards are obtained by any pupil, they are exchanged for a CHECK, (25 merits,) representing a perfect *School Week.* Four Checks are, in like manner, exchanged for a CERTIFICATE OF MERIT, representing one hundred merits, or a perfect *Month.* These Certificates bear the pupil's name and are signed by the teacher. The number held at any time will show the pupil's standing in the School.

If a PRIZE is to be awarded at the close of the session or year, there can be no difficulty or possibility of mistake in determining to whom it belongs; and the decision being made in public, each pupil exhibiting the number of Cards and Certificates received, no suspicion of partiality or favoritism can possibly arise.

The AIDS are beautifully printed in the very best colors, and are neat in design. The Certificates, in themselves, are prizes which few children will fail to admire and cherish The Single Merits and Half Merits are printed on card-board; the Cards and Checks on heavy cap paper, and may be used many times. This makes the system very cheap.

The AIDS are put up in sets, each containing 80 CERTIFICATES, 120 CHECKS, 200 CARDS and 100 SINGLE MERITS and HALF MERITS. Price per set, $1.25. By mail, prepaid, $1.35.

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Makes a Surface which Rivals the Best Wall Slates.

It is perfectly Black; never Crumbles; always remains Hard and Smooth.

It is successfully applied to any kind of board or wall, and is invaluable in renovating old wooden Blackboards. It has been used twelve years in some of the best Schools of New England. The surface is as smooth and perfect *now* as when applied This proves its durability. It is put up in tin cans and safely sent by Express.

By following directions, any teacher may easily apply the Eureka Slating, and make a *perfect Slate surface*, wonderful in *color, smoothness and durability.*

PRICE $1.75 PER PINT; $3 PER QUART.

5 per cent. discount on five gallons, and 10 per cent. on ten gallons or more.

One pint will cover about 30 sq. ft.; hence it makes a cheap blackboard. In Chicago New York, Philadelphia, Boston, and vicinities, we will apply it at 10 cts. per sq. foot.

☞ Do not confound EUREKA LIQUID SLATING with slating known by other names, or manufactured by other persons; for it has its imitations. But no other slating can produce *the perfectly smooth, dead-black surface of the EUREKA.*

Prominent teachers and school officers in every part of the country have so thoroughly tested the EUREKA SLATING that we do not hesitate to warrant it.

Testimony for the EUREKA SLATING:

OFFICE OF SUPERINTENDENT OF PUBLIC SCHOOLS, BUFFALO, July 5, 1866.

Three years ago "Eureka Slating" was applied to Blackboards in our Public Schools. They are now in fine condition, and do not seem worn in the least by constant use. I recommend this Slating to teachers and school officers.

JOHN S. FOSDICK, *Superintendent.*

GALESBURG, ILL., April 12, 1866.

I have used "Eureka Slating," to restore old and to make new blackboards, as I visit the schools of my county. In every case it gives perfect satisfaction. I shall continue its use, believing it to be the best preparation made for blackboard purposes. J. H. KNAPP, *Co. Supt. of Schools, Knox Co., Ill.*

I take pleasure in recommending the "Eureka Slating" whenever an oppoltunity offers.

NEWTON BATEMAN, *State Supt. Public Instruction, Illinois.*

ST. JOSEPH, MISSOURI, Aug. 28, 1865.

It is easily applied and makes a beautiful and perfect blackboard surface. E. B. NEELY, *Supt. Pub. Schools.*

The Eureka Liquid Slating will always give satisfaction when *properly* applied.

JOHN D. PHILBRICK, *Supt. Public Schools, Boston, Mass.*

SUPERINTENDENT'S OFFICE, TROY, N. Y., June 21, 1866.

It gives excellent satisfaction, I can imagine nothing better. EDWARD DANFORTH, *Supt. Schools.*

We have used Eureka Slating on our blackboards since 1864, I do not hesitate to say that they are superior to the best stone slates. C. G. CLARK, *Master Bigiow Grammar School, South Boston. Mass.*

NEW HAVEN, CONN., April 23, 1866.

I have used it nine years, and it seems to improve. From my own experience I think it will last FIFTY YEARS. E. ROBBINS.

Your Eureka Slating is wonderful. I applied it to old blackboards. They are like stone slate.

O. R. WILLIS, *Principal Alexander Institute, White Plains, N. Y.*

CHICAGO, ILL., March 10, 1866.

For fifteen years I have used blackboards of every sort, those made of wood and different kinds of wall coated with a variety of preparations. I have tried quarry slate. For three years past I have used boards and plaster wall, coated with "Eureka Slating," and have found them superior to any other surface.

ALONZO J. HOWE, *Prin. Prep. Dept., Chicago University.*

INDIANAPOLIS FEMALE INSTITUTE, IND., March 12, 1866.

For four years we have used Eureka Slating, with complete satisfaction,—on wood, papered walls and hard finish. I prefer it to *real slate*, because the surface is as good, with advantage of unbroken surface to any extent.

C. W. HEWES, *President.*

MINNESOTA STATE NORMAL SCHOOL, WINONA, March 13, 1866.

Our blackboards are finished with "Eureka Slating." When properly applied it leaves nothing to be desired. It is equal to the best Vermont and Lehigh Slates, besides being cheaper. I recommend it to the teachers of the Northwest. WM. F. PHELPS, *Principal.*

N. Y. STATE NORMAL SCHOOL, ALBANY, N. Y., June 22, 1866.

I recommend "Eureka Slating," having found it durable and cheap. OLIVER AREY, *Principal.*

AURORA INSTITUTE AND CLARK SEMINARY, AURORA, ILL., May 15, 1866.

We have used "Eureka Slating." It gives entire satisfaction. It makes an excellent blackboard.

G. W. QUEREAU, (A. M.), *Principal.*

ALBION COMMERCIAL COLLEGE, MICHIGAN, May 3, 1864.

We find "Eureka Slating" surface equal to the best stone slates. (HON.) IRA MAYHEW, *President.*

NATIONAL BUSINESS COLLEGE, CHICAGO, May 25, 1866.

We speak in the highest terms of "Eureka Slating." We have used it in our four College Buildings, with daily attendance of 1,480 students. It has exceeded our hopes in fineness of surface and durability. We have 9 on common walls, and upon old blackboards. In both cases it gives perfect satisfaction.

H. G. EASTMAN, LL. D., *President;* D. K. ALLEN, *Secretary.*

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SHERWOOD'S

NEW PATENT INK WELLS FOR SCHOOLS.

Fig. 1 represents top view of cover; 2, top view of well without cover 3, bottom of cover; 4, edge of cover; 5, well complete; 6, key to cover. The Ink Well (5) is inserted into desk through hole bored for the purpose, so that the flange rests on surface of desk, and is secured in place by screws in countersunk holes. Flange of well has on its outer edge a lip, which alone rests on desk, leaving space within below interior part of flange. This space allows room in which pins projecting downward from lower side of cover may freely move. Pins have heads (as seen in 4), and are first inserted through apertures large enough to admit them freely in flange of well (as in 2). From these apertures extend, concentrically in opposite directions, curved slots, just wide enough to allow necks of pins to pass freely. Lower edges of these slots have slight inclination downward from apertures, so that as cover is turned the heads of pins become wedged against inclined surfaces, and draw cover closely upon well, on which it fits tightly. Cover is fastened by key (Fig. 6).

This new well is simple, and while it contains the combined excellences of the best wells now in use, it remedies the defects of all. 1st. We have a neat and secure fastening for the cover, which can only be removed with the key, which should be kept by the teacher or janitor.

2d. The well itself, after being fastened by two common screws, never need be removed; the glass lining only being removed for cleaning, which can be done by unscrewing the cap with the key.

3d. It will not get out of order,—by its simplicity of arrangement there is no lining to corrode. It cannot burst and spill the ink, and cannot be removed and lost by the pupils.

4th. It can be used in the holes made for other wells. 5th. It is economical.

Price of Ink Wells per dozen, $3.50; Keys for same, no charge.

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J. W. SCHERMERHORN & CO., 430 BROOME STREET, NEW YORK.

They manufacture and sell **Heavy Plain Glass Fonts or Ink Wells**, per dozen, **$1 20**; Japanned Covers for same, **$1 20**; Brass Covers, very neat and elegant, **$1 25.**

HALL'S GREAT GEOLOGICAL CHART,

Size 6ft. 6in. by 5ft., finely engraved and superbly colored,

Exhibits the order in which the successive strata of rocks are arranged, and the characteristic fossils which have mainly afforded the key to this arrangement. It gives the appearance that would be presented if a section were made from the surface towards the centre of the earth, exposing the edges of the different layers. It is, in fact, such representation as may be seen in the banks of many rivers, as the Niagara, or in the high rocky cliffs of the lake or ocean shores, only it is much more extended.

This beautiful chart was prepared by Professor Hall, that it might render a study so delightful in itself, and so practically useful, more extensively introduced, and more easily understood.

Only a limited number of these charts were produced from the lithographic stones. The subscribers have for sale a few of them, fresh and perfect.

Price, Mounted on Cloth and Rollers, **$18 00**; Wholesale price, for Teachers.....**$12 00**
Key to Hall's Geological Chart..... **1 00**

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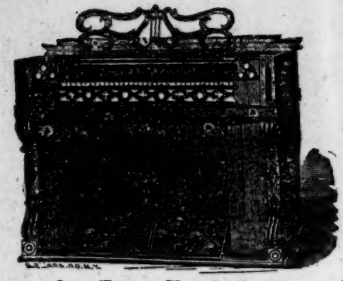

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